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Original Articles

ARE THE PROTEOLYTIC AND MILK COAGULATING EFFECTS OF GASTRIC AND PANCREATIC JUICE DUE TO ONE AND THE SAME ENZYME?*

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The distinguished St. Petersburg physiologist, J. P. Pawlow, associated with S. W. Parastschuk, has published[1] a series of experimental investigations under the above heading. The view hitherto held and still held by most physiologists is that the proteolytic and milk-coagulating effects of gastric juice and pancreatic juice are due to specific enzymes. The earlier investigations on the subject date from Hammarsten.[2] In order to state precisely the direction of the inquiry, it is necessary to emphasize that Pawlow and Parastschuk attempt to prove that a separate and distinct milk-curdling enzyme does not exist, but that the milk coagulation is only a property of the pepsin. The *Fragestellung* here is not precise as might be desirable, for proteolytic and milk-coagulating effects might be conceived as attributable to one and the same proteid ferment, and yet pepsin and chymozin may be two different enzymes, for we may conceive that pepsin, the proteolytic enzyme, possesses also, to a certain extent, a milk-coagulating effect, which is only developed in an acid reaction and not in a neutral reaction, and, as far as human gastric juices are concerned, it can be stated that such an enzyme occurs which will curdle milk in the presence of an amount of HCl which, as a rule, is normal to human gastric juice (two parts per thousand), but will not curdle milk if the gastric juice is exactly neutralized. This disappearance of milk-coagulating power in the case of canine gastric juice, after it had been neutralized with sodium bicarbonate, was noticed by Pawlow and Parastschuk (p. 422), but they attributed this disappearance to a destructive effect of the alkalies employed, particularly to Na_2CO_3. When the juice was neutralized with $NaHCO_3$, the ferment could be preserved. To the destruction of the pepsin by alkalies they attribute their inability to separate these two enzymes by Hammarsten's method (shaking of gastric juice with magnesium carbonate, by which the pepsin is torn down by this insoluble powder), while the chymozin remains in solution. The third and fourth filtrates prepared in this way will coagulate milk energetically, but will not digest raw fibrin in twenty-four hours, not even if raised to the normal acidity. But Pawlow asserts that when this fibrin was diluted five to ten times its volume with 0.1 to 0.2 per cent. solution of HCl, the proteolytic effect on fibrin became distinctly evident.

The two enzymes, however, can be separated in a much simpler manner; by heating gastric juice to 65 degrees C. for ten minutes the chymozin can be destroyed. When chymozin is in solution together with HCl, three parts per thousand, the enzyme can be destroyed completely if the solution is kept at a temperature of 37 to 40 degrees C. for forty-eight hours.[3]. The pepsin is not destroyed by this process. In this manner a pepsin solution free from chymozin can be obtained. A solution of parachymozin free from pepsin can also be prepared in a similar manner.[4] Bang's investigations have made it very highly probable that the chymozin enzymes of different animals are by no means identical, but show striking differences in milk-coagulating power. Accordingly it becomes necessary in testing the results of previous investigators, to use the chymozin from the same animals as they employed.

In experiments with milk coagulation which extend over ten hours it must not be overlooked that milk may coagulate spontaneously when drawn and preserved under absolutely sterile conditions. Pawlow and Parastschuk, in attempting to demonstrate that proteolytic and milk-coagulating effects are attributable to one and the same enzyme, offer as proof of their assertion the parallelism of effects and proportionality of work done. The degree of proteolysis was measured in millimeters of a column of boiled albumin (Mett's method, devised in Pawlow's laboratory), and the degree of coagulating power was measured by the time that was required to coagulate 10 c.c. of milk by varying amounts of gastric juice. The coagulation of the milk always occurred in an acid reaction. The acidity of the various portions of the gastric juice was equalized by 0.5 solution of HCl. In Table 1, Pawlow[1] demonstrates that the least chymozin was secreted when the test food was milk (10 c.c. of milk coagulated in fifty minutes), and the most chymozin was secreted when the test food was bread (10 c.c. of milk coagulated in two and one-half minutes by the juice of the same animal). This same animal digested 5.8 mm. of albumin column (Mett), showing that the proteolytic power was very active also in the same bread juice. But in Table 2 we are told that a bread juice which digested 4.8 mm. did not coagulate 10 c.c. of milk until three minutes and ten seconds had elapsed, forty seconds longer than the previous juice, which had digested the same length of albumin column. In Table 2 the coagulation time is approximately the same for bread, meat and milk juice, 190 to 195 seconds, but the relative concentration of

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Hoppe-Seyler's Zeitsch. f. physiol. Chemie, vol. iv, pp. 415 to 452: "Ueber die ein und demselben Eiweissfermente zukommende proteolytische und milchkoagullerende Wirkung verschiedener Verdauungssäfte."

2. Maly's Jahres Berichte, vol. ii, 1872, p. 118. See also Hammarsten's Lehrbuch der physiol. Chemie, 5th edition.

3. Hammarsten, p. 271.

4. Pflüger's Archiv, vol. lxxix, p. 425. Article by Ivar Bang.

the ferments is placed at 1 for bread juice, 4.29 for meat juice, and 8.41 for milk juice. On page 419 the authors assert that this Table 2 shows a perfect proportionality of proteolytic effects and of milk-curdling power. The further efforts of these investigators were directed toward showing a parallelism of these two effects of gastric juice under the (a) influence of putrefaction of the juice; (b) the influence of heat (Table 5), and (c) the influence of chemicals, salts, bile and alcohol, etc. Similar experiments are then narrated concerning pancreatic juice obtained in various ways. It is interesting to learn that the pancreatic juice as secreted was inactive for curdling milk, and had to be activated by the addition of succus entericus and that the activation of the milk-curdling agent occurs at the same rate as the activation of the proteolytic agent, under the influence of succus entericus (enter-kinase).

On page 432 we are told that Table 12, which shows the proteolytic power and milk-coagulating power of juice (1) from the gastric pepsin glands, (2) from pylorus glands, and (3) from Brunner's glands, gives the evidence that the two powers correspond perfectly. Table 12, however, does not show this convincingly. In the second column of that table the proteolytic power is shown to shrink from 2.5 mm. (Mett) for pepsin gland juice to 0.5 mm. (Mett) for Brunner's gland juice. But the milk-coagulating time for pepsin gland juice is 27 minutes, for Brunner's gland juice is 18 minutes. In order to show an exact proportionality, the milk ought to have been coagulated in the same periods of time, as is shown in Table 2. But it is apparent from Table 12 that as the proteolytic power sank the coagulating power became intensified. Possibly an involuntary distinction is made between these two effects on page 439, where dilution is said to favor the proteolytic power, restoring it when it had been destroyed by the cold sodium acetate.[5] But, on the other hand, dilution is said to destroy the coagulative power. A reduced proteolytic power under the checking influence of salts, or dilution, does not necessarily indicate that the ferment is present in smaller quantities. It may be that the substance which is to be acted on proteolytically—the albumin or the fibrin—is so altered by the salts or other substances employed as to render them more insoluble. This can be demonstrated by performing experiments with known strengths of pepsin, allowing it to act first on ordinary pure fibrin, and then on fibrin which has been allowed to become saturated in a 20 per cent solution of sodium acetate. The proteolysis will be markedly less in the last case.

Hammarsten[6] objects to the main conclusion of Pawlow and Parastschuk that the two effects spoken of are due to one and the same enzyme, on the ground that two different rules exist, according to which these two effects depend on the quantity of ferments. According to Pawlow, however, the time of these reactions varies with the conditions influencing them. Some may accelerate and others may prolong the time of reaction. The chief conditions which he cites are alkalinity, acidity of the medium, and the degree of dilution. The authors recognize three rules under such conditions. A neutral solution of chymozin causes milk coagulation provided it is present in the solution in a certain definite concentration: (1) Then coagulation occurs according to the rule of inverse proportionality between the quantity of the ferment and the coagulation time; (2) when the chymozin is in acid solution the quantities of the ferment are inversely proportional to the square root of coagulation time, that is, the reaction is progressively accelerated; (3) when, in a very much diluted neutral solution of ferments, the quantities of the enzymes are proportional to the square of the coagulation time. These three varying conditions concern mainly the milk-coagulating power. In a similar way, Pawlow shows that the rules of the dependence of the effects of enzymes on the amounts of the enzymes can be influenced by external conditions. All such rules are reliable only within very narrow limits.

After reading the article as abstracted, we are justified in asking whether parallelism of effects and proportionality of work done in two different catalytic actions, really constitute satisfactory proof that the two actions are due to one and the same catalyzer. Pawlow and Parastschuk demonstrate that the proteolytic and milk-curdling effects of pancreatic juice show a parallelism and proportionality under varying conditions. But the same can be shown to be true of the amylolytic and fat-splitting power of pancreatic juice. Why, then, not assert that the amylolytic and lipolytic effects are due to one and the same enzyme also? Neilson[7] has shown that colloidal platinum, like lipase, can bring about hydrolysis and synthesis of fats. He also shows that this hydrolysis by platinum increases with the concentration of the platinum, increases with the temperature, is independent of the concentration of the ethyl butyrate, and that poisons[8] reduce the hydrolysis by platinum black. These same variations of effects, under the influence of concentration, temperature, poisons and salts, can be shown to exist with regard to the effects of a number of organic enzymes. For example, in the case of saliva it can be shown that the amylolytic action, the conversion of starch into maltose, is increased by concentration of the ferment, and by heat, but is injured by certain chemicals almost in the same manner as lipase is injured in its hydrolysis of ethyl butyrate (experiments of Loevenhart). If, therefore, we should execute a series of experiments in two series, one with colloidal platinum on ethyl butyrate under these varying conditions, and the other with saliva under varying conditions, certainly a rising or falling of the amount of catalytic work done, that is, a parallelism of effects, could not be asserted as proving that the two different effects are due to one and the same catalyzer in this case, for we know that two different agents are used in the experiments. The figures of the hydrolytic effect of colloidal platinum are given in the article by Hugh Neilson.[7]

When chymozin or rennet is separated from the stomach of a calf by Blumenthal's method,[9] an amorphous, white, gelatinous substance is gained, which greatly resembles aluminium hydrate in appearance. This precipitate is nearly pure rennet, and a very small portion of it speedily causes coagulation of milk. It has no odor or taste when prepared by this method, readily dissolves in water, and forms a clear solution. Blumenthal asserts that the same treatment will separate two enzymes from the so-called pepsin essences of commerce, and that the mother liquid from which the rennet is removed has no curdling action. The trypsin and chymozin of the pancreatic juice was separated by Roberts. A salt solution extract of a pancreas was slightly

5. Criticism of Glessner's experiments in Beitr. z. chem. Physiol. u. Path., vol. i, 1901.
6. Lehrbuch der Physiolog. Chemie.
7. Am. Jour. Physiol., vol. x, p. 191.
8. Ibid., table, p. 197.
9. J. Reynolds Green, Soluble Ferments, etc., Cam. Nat. Sci. Man., 1899, p. 237.

acidulated with HCl and kept at 40 degrees C for three hours. When neutralized, it was found that the trypsin had been destroyed, while the rennet or chymozin was unharmed.

W. D. Halliburton and Brodie draw a distinction between gastric and pancreatic rennet which has not been noted by previous observers. According to them the clotting indicated by pancreatic rennet is not a true coagulation, but a precipitation which takes place in a warm bath at 35 to 40 degrees C. The precipitate is finely granular and can not be detected by the naked eye. On cooling it to the temperature of the air, it sets into a coherent curd which can be again broken up by warming to 35 degrees C., when the granular condition returns, and the milk appears fluid. This may be repeated several times. Halliburton and Brodie call the proteid in this condition "pancreatic casein," and they say it can be converted into tyrein by gastric rennet.

The chymozins of different animals are not identical, and the chymozins of different organs in the same animal, as Halliburton and Brodie have shown, are not identical. The differences in the chymozins of various animals are considerable.[10] Most of the experiments with chymozin or rennet made prior to the publication of Pawlow and Parastschuk were made with the chymozin of the calf's stomach, and not until a comparative and quantitative study of the various chymozins has been made can it be proved that the milk-coagulating power of all chymozins is alike, or that this power is governed by the same rule with all forms of this ferment. Dilution, for instance, affects the milk-curdling power of chymozin from the pig in a different manner from the chymozin obtained from the dog. For comparing the effects of their chymozin with the results of previous investigations, it would have been necessary for Pawlow and Parastschuk to use the chymozin from the same animal.

Pawlow and Parastschuk, in attempting to prove that proteolysis and milk-curdling effects are due to one and the same enzyme, laid greatest stress on the demonstration of parallelism of effects under various chemical and physical influences, and, secondly, on proportionality of work done. To subject a digestive secretion that gives evidence of two strikingly different effects to varying external influences, and thereby showing that the effects increase and diminish together, or disappear together, can hardly be considered a satisfactory form of experimental logic to prove that these two different effects are due to one and the same molecule. The work of these authors proves that the technic and method of experimentation may be objective and perfect, and yet the interpretation or subjective deduction therefrom may be unsatisfactory.

In order to make clear my meaning I will cite the example of two well-known digestive enzymes, the actions of which occur best in a mildly alkaline medium, ptyalin of the saliva, and trypsin of the pancreatic juice. Both trypsin prepared by Kühne's[11] method and ptyalin can be shown to be augmented and inhibited in their characteristic effects on fibrin and boiled starch, respectively, by temperature, by chemicals and poisons, by concentration and dilution. The amount of ptyalin and the amount of boiled starch in the one case, and the amount of trypsin and the proteid on which it acts, either fibrin or boiled egg albumin, can be so adjusted that a parallelism of effects and proportionality of work done can be

10. Pflüger's Archiv., vol. lxxix, p. 425.
11. Unters a. d. Physiol. Institut der Universität Heidelberg, vol. i, p. 222.

EXPERIMENTS WITH DOG SALIVA AND TRYPSIN (PANCREATIC JUICE), DEMONSTRATING EFFECTS OF INCREASE OF TEMPERATURE, ON DIGESTION OF BOILED STARCH AND ALBUMIN RESPECTIVELY.

Canine saliva and trypsin solutions were subjected in different and separate portions to the various temperatures stated in column 1, and thereafter their amylolytic and proteolytic power tested.

Temperature. Deg. C.	SALIVA.	PANCREATIC JUICE—TRYPSIN.
	Mm. of Boiled Starch Column Digested.	Mm. of Albumin Column Digested.
10	4.20	5.52
12	4.15	5.5
15	4.25	5.9
20	4.25	6.
30	5.1	6.5
40	4.95	5.9
50	3.5	4.5
52	2.75	3.62
54	2.	3.
56	0.5	0.9
58	0.3	0.5
60	0.	0.
62	0.	0.
64	0.	0.

Both enzymes exhibit at first a slight increase of their characteristic effects followed by a gradual diminution until the enzymes are completely destroyed at 60° C., a parallelism of effects—which can also be demonstrated if both saliva and trypsin solution are poured together and a starch, as well as an albumin tubule, placed in the combined solution simultaneously. But here the action of amylopsin requires exclusion.

TESTS FOR ANY CHANGE OF ACIDITY VALUES IN THE GASTRIC JUICE ON STANDING AT ROOM TEMPERATURE.

Comparisons of work done by pepsin and chymozin of human gastric juices, together with quantitative determination of the free HCl and the total acidity. Gastric filtrates allowed to stand at room temperature for varying periods.

Notes.—1. Same gastric juice of Spencer when left in incubator at 36° C. began to lose its proteolytic power in 20 days. The milk-curdling power diminished more rapidly and disappeared entirely on the eighteenth day.

2. From Spencer a very large test meal was drawn, amounting to 760 cubic centimeters of gastric chyme, which was kept under experimentation 56 days.

3. In this table the figures show the proteolysis to diminish gradually from 8 mm. on January 3, to 4 mm. on February 28, but the milk-coagulating power diminishes much more rapidly and out of all proportion to the rate in which the proteolytic power diminishes. No parallelism in the diminution of these effects is here detectable.

WEINBERG.	November.					
Date	17	18	19	21	22	23
Free HCl	39	42	44	42	42	41
Total Acid	62	64	63	65	56	70
Proteolysis in terms of millimeters of Mett albumin tubes.	4.5	4	4.5	4	4.5	4
Chymozin: 10 c.c. milk coagulated in minutes.	3'	3'30"	3'	3'	3'30"	3'

CARTRIDGE.	January.								
Date	17	18	20	23	25	26	28	30	31
Free HCl	74	76	76	74	74	76	72	78	74
Total acidity	100	104	108	104	104	104	102	106	106
Proteolyis in terms of millimeters of Mett albumin tubes.	8	8	8	8	8	8.5	7	7.5	6
Chymozin: 10 c.c. milk coagulated minutes.*									

HAMILTON.	Dec.	January.									
Date	30	3	5	7	10	12	14	18	20	22	26
Free HCl	65	60	64	66	70	62	64	68	70	66	68
Total acidity	110	110	116	120	124	120	118	118	120	118	118
Proteolysis in terms of millimeters of Mett albumin tubes.	6.5	6	6.5	6.5	7	6	6	6.5	7	6.5	6.5
Chymozin: 10 c. c. milk coagulated in minutes.*	4'	4'10"	4'	4'	3'10"	3'40"	3'40"	3'45"	3'10"	4'	4'

*Increasing cloudiness of gastric filtrate made the exact time of turning of the dimethyl amido benzol more difficult to recognize as the filtrate became older.

DAWKINS.	January.			February.						
Date	25	28	30	1	4	7	8	10	14	18
Free HCl	60	62	62	62	62	60	60	62	62	62
Total acidity	90	100	88	88	98	96	100	110	105	100
Proteolysis in terms of millimeters of Mett albumin tubes.	5	4 5	5	4.5	4.5	5	5	5	5	5
Chymozin: 10 c. c. milk coagulated by 2 c.c. gastric filtrate in minutes.	1'	1'	1'5"	1'5"	1'5"	1'5"	1'5"	1'5"	1'5"	1'5"

WARNER.	February.											
Date	1	2	4	6	8	10	14	16	20	21	24	26
Free HCl	26	24	24	26	26	26	28	26	28	26	28	28
Total acidity	66	70	72	74	72	72	72	70	70	68	70	68
Proteolysis in terms of millimeters of Mett albumin tubes.	3	3	3	3		3	3 5	3.5	3	3 5	3.5	3.5
Chymozin; 10 c.c. milk coagulated in minutes.	5'	5'	5'	5'	5'		8'30"	10'15"	10'5"	11'	12'	15'10"

SPENCER.	February.											
Date.	1	3	6	10	14	16	18	20	22	24	28	
Free HCl	60	59	59	58	57	55	50	50	48	48	46	
Total acidity	65	66	66.5	67	68	67.5	68	69	70	72	74	
Proteolysis in millimeters of Mett Albumin tubes.	6	5.5	5	5	5	5	4.5	4.5	4	4	4	
Chymozin: 5 c. c. sterile milk coagulated by .2 c.c. gastric filtrate in minutes.	1'0"	1'2"	1'2"	2'0"	3'5"	3'5"	4'0"	5'5"	10'	12'5"	20'5"	

WARD.	November.													December.		
Date	16	17	18	19	21	22	23	24	25	26	28	29	30	1	2	3
Free HCl	34	31	34	34	32	32	34	32	32	32	34	32	32	31	32	32
Total acid	48	47	48	48	48	48	48	50	50	50	49	48	50	48	48	49
Proteolysis in terms of millimeters of Mett albumin tubes.	5	5	5	5	5	5	5	5	4.5	4.5	5	4.5	4 5	4	3.5	3.5
Chymozin 10 c.c. milk coagulated by 0.2 c.c. gastric filtrate in minutes.	3'15"	3'15"	3'15"	3'15"	3'15"	3'15"	3'15"	3'10"	3'20"	3'20"	3'24'	5'	5'	3'	6'	8'

PYLE.	November.			December.									
Date	22	24	25	1	2	3	4	5	6	7	8	9	10
Free HCl	29	29	30	30	31	30	30	31	30	31	31	31	32
Total Acid	64	64	66	65	65	64	65	66	64	65	64	64	64
Proteolysis in terms of millimeters of Mett albumin tubes.	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	5.5	5.5	5.5	5.5	5
Chymozin: 10 c. c. milk coagulated in minutes)	3'30"	4'	4'	3'50"	3'50"	3'50"	3'50"	3'50"	3'20"	3'20"	3'20"	3'20"	3'20"

SPENCER.	January.																
Date.	3	4	5	6	7	9	12	14	15	18	20	21	24	26	28	30	31
Free HCl	60	60.5	60.5	61	60	60	61	60 5	61	61	66	65	65	65	65	60	59
Total acidity	64	66	64	66	66	64	65	65	66	65	60	60	59.5	59.5	60	65	65
Proteolysis in terms of millimeters of Mett albumin tubes.	8	8	8 5	8.5	8	8	8	8	8 5	8	8	8.5	8	7.5	7.5	7.5	7.5
Chymozin: 5 c. c. sterile milk coagulated by .2 c.c. gastric filtrate in minutes.	30"	30"	30"	30"	30"	30"	30"	30"	30"	30"	30"	30"	30"	1'8"	1'8"	1'8"	1'8"

water bath, and sealed at both ends with sealing wax. For amylolysis the tubes are filled with boiled starch in a similar manner. The diastasic power is expressed by the number of millimeters of boiled starch digested in a given time.

One of the most interesting facts discoverable during persistent analyses of human gastric juices is the total absence in some of them of the milk-curdling enzyme, while at the same time the peptic or proteolytic enzyme is present. This is proved by the fact that while the filtrate from test meals, consisting of bread and water, will not curdle milk, it will give the biuret reaction after it is added to discs of boiled egg albumin or to fibrin. This occurs in certain stages of chronic atrophic gastritis, when the milk-curdling enzyme disappears before the peptic enzyme. I have also seen it in two cases of cancer of the stomach. I must emphasize, however, that I have studied the gastric juice of two persons who are normal to all subjective and objective examinations. Into the stomach of one of these persons I poured a pint of milk, and withdrawing it by the stomach tube an hour thereafter it was in the identical condition in which it was poured down through the stomach tube. Nor did this milk coagulate after it was allowed to stand in an incubator for three hours. Nor could it be made to coagulate by the addition of varying amounts of calcium carbonate, nor by the addition of 1/10 normal solution of HCl added until the normal amount which be present in the gastric juice was reached. Milk to which HCl is added in this manner will coagulate when no enzyme is present, but it takes a much longer time. Gastric juice which was boiled, and thus had its enzymes destroyed, did not coagulate milk any sooner than a solution of HCl of the same strength. In testing milk coagulation on the addition of HCl, the time in which the coagulation occurs is an important factor in the determination.

The same persons whose gastric juice could not curdle milk produced a feeble proteolytic enzyme, for the filtrate from an Ewald test meal gave the biuret reaction. This conclusion is based on the assumption that the biuret reaction is an indication of the presence of peptones. These gastric juices, although they contain no free HCl, to the ordinary color test showed a feeble dissociation of methyl acetate by the Hoffman-Ostwald method of determining the free HCl. This probably indicates that the HCl may be so loosely combined with proteoses and acid albumin that it can readily dissociate and in the presence of pepsin produce peptones, though the ordinary color tests (Congo red, tropeolin(00) phloroglucinvanillin) are negative.

We had in these persons a demonstration of gastric juices: (1)That contained no free HCl, but combined HCl because they were capable of dissociating methyl acetate only slightly; but could form acid albumin and hemopeptone; (2) that could not coagulate milk; (3)

shown to exist between these two ferments. If the same logic were applied to these phenomena as Pawlow and Parastschuk apply to milk-curdling and proteolysis, it would be equally possible to assert the amylolysis and proteolysis are due to one and the same enzyme, if it were not positively known that two definite enzymes were employed.

The method employed in Pawlow's laboratory to determine the degree of amylolysis is similar to that of Mett for proteolysis. Mett tubes are employed which are filled with filtered egg albumin coagulated in a

that gave the biuret reaction with an Ewald test meal. The conclusion seems justifiable that pepsin was present, but rennin or chymozin was absent, a conclusion which is difficult to harmonize with the view of Pawlow that the proteolytic and the milk-curdling effects are due to one and the same molecule.

As a further evidence of the differences between the chymosin of various mammalia, it should be stated that an antichymosin prepared by injecting the chymosin of the calf's stomach is not an antichymosin for the dog's milk-curdling enzyme. And, furthermore, an antichymosin (antilab) is not at the same time an antipepsin, that is, it does not arrest the proteolytic effect of the pepsin made from the stomach of the same animal from which the chymosin was prepared. If pepsin and chymosin (proteolytic and milk-curdling effects) were properties of the same molecule an antichymosin ought to be at the same time an antipepsin.

In their original article Pawlow and Parastschuk state that in their opinion chymosin acts synthetically, i. e., milk coagulation is the first stage toward the upbuilding of the new (native) proteid molecule; with this hypothesis they aim to bring their views in harmony with the modern idea of the reversible action of enzymes (Kastle and Lowenhart). Their viewpoint then is this: Pepsin and rennin (or chymosin) represent the same enzyme molecule—only pepsin acts analytically. Rennin (or the effect we attribute to the hitherto supposed rennin) is the evidence of the synthetic effect. Recently,[12] however Ernst Laqueur[13] has given the experimental evidence that chymosin or rennin acts analytically—i. e., splitting off a part of the casein molecule.

To Dr. R. A. Warner and Dr. J. Howard Iglehart, my associates, I am indebted for control analyses and tests in arranging above tables.

MINIMAL ALBUMIN REQUIREMENTS IN HEALTH AND DISEASE.*

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In 1891 I published[1] a series of experiments on the subject of the quantity of albumin necessary to keep a human individual in a normal nitrogen equilibrium.

At that time the quantity of albumin considered necessary for an adult in 24 hours was 118 grams, these figures resting on experiments made by Voit and his pupils.

I experimented on myself for a period of thirty days. The food, which was the same in quantity and quality for every twenty-four hours of the thirty days of experimentation, consisted of meat, rice, potatoes, bread, corn-starch, eggs, milk, sugar and butter, and contained 67.80 grams of albumin. The average quantity of nitrogen excreted in the form of urea by the urine, and estimated by the Kjeldahl method, amounted to 8.23 grams for every twenty-four hours, which, computed as albumin, amounts to 51.4 grams. This would leave 16.40 grams of albumin, or 2.62 grams of nitrogen unabsorbed by the gastrointestinal tract.

The organism, therefore, in these experiments, utilized 51.4 grams of albumin in twenty-four hours. Other experiments made at about the same period all tended to indicate that the figures of Voit, viz., 118 grams of albumin, could be deviated from without any apparent inconvenience. Thus, in Rubner's experiments, but 38 grams of albumin were utilized in twenty-four hours for a period of three days, while in the experiments of Hirschfeld 35.4 grams of albumin were used per diem for a period of eight days. Other experimental corroborations offered by several other experimenters at about the same period might here be detailed, but the above are sufficient to prove that at least for periods varying from three to thirty days, the Voit figures of 118 grams of albumin, could be quite materially reduced.

Munk and Rosenheim, however, have offered, separately, experimental evidence that, at least in carnivorous animals, a decided reduction of the amount of albumin in the food for any great length of time, is followed by grave inanition.

Recently, Dr. Chittenden has revived the subject of the question of the minimal albumin requirements of the healthy man. Dr. Chittenden pursued his experiments on a large number of subjects, and extended them over a longer period of time. As in the experiments performed on myself, Chittenden found that the figures of Voit (118 grams of albumin) could be materially reduced without affecting the wellbeing of the individual.

In my paper already referred to it was contended that as long as an organism is in a state of nitrogen balance it is clear that neither the separate organs nor the entire system can be in disharmony as regards its nitrogen metabolism, and it follows from this that the quantity of albumin which is necessary to maintain an organism in a nitrogen balance, expresses at the same time the quantity of albumin which is at least necessary to repair the nitrogen waste of the fully developed organism.

These experiments are of interest to us not only from a physiologic and economic point of view, but also from a standpoint of practical therapeutics. Thus, for a number of years, I have made practical use of these facts where it is desired to reduce the albumin metabolism in Bright's disease, and where it is necessary to diminish excessive uric-acid production, which accompanies various diseases.

So, too, are these facts of importance where the degree of gastric albumin digestion is below the normal, and where it is desired to burden the stomach as little as possible with albuminous foodstuffs.

Likewise is this subject of significance in some cases of intestinal indigestion, with accompanying toxemic symptoms, although, unfortunately, our knowledge of the chemistry involved in this class of cases, is not as exact nor as precise as in cases of purely gastric origin.

Of significance also is the subject of minimal albumin quantity in connection with the criticism of the one or two meal a day fad, which is being so widely recommended by both lay and medical advisers. I say fad advisedly, for while there are some individuals with active digestion who thrive on two or even one meal each day, the average person, and particularly the great majority of stomach patients, fare much better where the food necessary in twenty-four hours is divided into a number of meals. In most stomach patients the question arises, how much or how little albumin should be ingested to meet satisfactorily the abnormal conditions of the gastric secretion and motility; and it is in these cases that the subject of minimal or maximal albumin

12. This highly important insertion was made possible by the arrival of the journal quoted while the proof of this article was being read.

13. Hofmeister's Beitr. z. chem. Physiologie u. Path., vol. vii., p. 273; also Biochem. Centralblatt, vol. iv., p. 333.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Ueber die Groesse des Eiweissbedarfs beim Menschen. Deutsche med. Wochft., 1891, No. 48.

quantity, and the number of meals necessary in twenty-four hours are of the utmost importance. A logical answer as to the number of meals we should take in twenty-four hours can only be given after making a thorough examination of the digestive and motor functions of the stomach; and it follows, therefore, that no absolute rule can be laid down which can be applied indiscriminately to every individual. It has been shown by experimentation that the average healthy individual digests the quantity of food required in twenty-four hours, more effectually and thoroughly, when it is divided into a number of meals than when it is taken at one time, and we also have learned by practical experience, as one would *a priori* expect, that in the stomach patient with weakened digestive action, this is even more true than in the healthy individual.

Further experimentation and observation will undoubtedly prove that the requisite albumin quantities necessary to maintain normal nitrogen equilibrium will more closely approach the figures of my experiments than those of Voit.

The occurrence of various digestive and metabolic abnormalities and deviations, both pathologic and physiologic, however, should warn us against an irrational acceptance and application of the minimal albumin figures.

I come in contact with scores of individuals who require large quantities of albumin to combat certain gastric abnormalities; and others, again, who likewise require an increased albuminuration in consequence of the existence of digestive and metabolic disturbances which make the normal fat and carbohydrate quantities inadmissible and injurious.

Again, there is another class of individuals which requires forced albumin feeding in consequence of the existence of some temporary or permanent condition of inanition.

It is evident, therefore, how fallacious an indiscriminate acceptance of the minimal albumin figures would be.

In fine, it may be said that while the experiments on minimal albumin quantities prove that the average individual may and usually does eat too much albumin; and while probably 60 to 80 grams of albumin are nearer the normal requirement than the 118 grams of Voit, we should bear in mind that individual cases may require even much larger quantities of albumin than those called for in the Voit formula.

THE FATIGUE OF COLD-BLOODED COMPARED WITH THAT OF WARM-BLOODED MUSCLE.*

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Our knowledge of the physiology of muscle has been obtained chiefly through the study of cold-blooded animals. Especial stress has thus far not been laid on the fact that the muscles of certain animals are subjected throughout life to a moderately high and fairly constant temperature, while with others the temperature is usually much lower and variable.

The question has hardly been raised as to whether such different physical conditions connote different physiologic characteristics. *A priori* we might expect such to be the case, and the observations here reported actually demonstrate a difference in one respect, namely, in some of the physical phenomena of fatigue.

It is commonly believed that the main physical characteristics of the fatiguing, as distinguished from the fresh muscle, are a slowing of the whole process of contraction, which is manifested by a lengthening of the descending portion of the muscle curve; and a diminution in the lifting power of the muscle, which is manifested by a decrease in the height of the curve. This belief arose from a study of frog's muscle, where both these phenomena are pronounced.

Several years ago I called attention to the fact that the slowing in the process of contraction was shared in part by the phase of shortening of the muscle, as well as by that of lengthening. This phenomenon is manifested graphically on the ascending portion of the muscle curve by a progressive increase in the horizontal distance between the point of beginning and the apex and is most pronounced long before exhaustion has begun. It is far more prominent in turtle's muscle than in frog's, being there almost equally evident with the two other phenomena mentioned. At the same time I showed that a different picture is presented by the fatiguing muscles of the cat, inasmuch as with them neither the phase of shortening nor that of lengthening is slowed, as the lifting power is diminished. Here was a marked difference between the muscles of two cold-blooded animals on the one hand and those of a warm-blooded animal on the other.

The present paper deals with the question whether this difference is directly due to the temperature to which the muscles are customarily subjected.

Of cold-blooded animals, the frog and the turtle have again been studied, the gastrocnemius, the sartorius and the gracilis major of the former, and of the latter the coraco-antebrachialis profundus, the dorso-occipitis, the coraco-radialis superficialis, the pubo-tibialis, the ileo-fibularis, the ischio-caudali-tibialis. Some of these muscles are red and some white in color. In all cases the muscles were excised, suspended in a moist chamber, attached to a writing lever, subjected to a constant temperature, and stimulated electrically by single induction shocks, while the contraction curves were recorded by strictly isotonic methods. No fundamental differences were manifested by curarized and non-curarized muscles. In general, two temperatures were employed, a high and a low, of approximately 12 C. and 34 to 37 C., the latter being as high a temperature as can safely be employed without coagulating the muscle proteids. At the low temperature the customary phenomena of fatigue are present: Slowing of the phase of shortening, which is slight in the frog and pronounced in the turtle; slowing of the phase of lengthening, which is marked in both species; and diminution of the lifting power. The result is not fundamentally different when the muscles are subjected to the higher, practically mammalian, temperature. The two phases of the contraction process are quickened by the heat, but their slowing in fatigue is still present, phenomenally so in the turtle's muscles. These phenomena of fatigue are, therefore, in cold-blooded muscle independent of temperature. Furthermore, inasmuch as curarized and non-curarized muscles do not differ in these respects, the inference is justified that the phenomena in question belong to the muscle protoplasm rather than to the intrinsic nerve tissue.

Of warm-blooded animals, the cat, the rabbit, the white rat, the white mouse, the guinea-pig and the woodchuck have been studied, the muscles being the gastrocnemius and the extensor longus digitorum. It was found possible to treat the muscles in the same way as those of the cold-blooded animals. Since their nerves

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

die very quickly, no curare was employed. Their muscle substance remains irritable for a sufficiently long time to enable excellent fatigue records to be obtained. At the temperature of the body there is a progressive dimi- in the height of the curves, with no lengthening of either the ascending or the descending portion. If, instead, the muscle be cooled to 12 C., and then fatigued, essentially the same result is obtained. There is, however, a broadening of the upper portion of the curves, indicating a tendency of the cooled tissue to linger in the contracted state; and this phenomenon, besides those above mentioned, is the most marked feature of the record of fatigue of the cooled mammalian muscle. While constantly present in the muscles studied, it is not sufficient to amount to a lengthening of the contraction process as a whole, with the single exception of the gastrocnemius of the white rat. In eight of the ten experiments performed with that muscle, careful measurement showed a slight lengthening, amounting in the maximum case to barely 0.7 of the original curve. This is almost a negligible quantity in comparison with the much greater lengthening exhibited by the muscles of both the frog and the turtle.

In view of the above facts, the following conclusions seem to be justified:

1. There is a physiologic difference between cold-blooded and warm-blooded animals in the mode of fatigue of their excised, voluntary muscles.

2. One of the characteristic phenomena of fatigue of the excised voluntary muscles of cold-blooded animals is a pronounced slowing of the whole contraction process manifested by a lengthening of the muscle curve. This is most pronounced at low temperatures. It is diminished, but not obliterated, at high temperatures.

3. The excised voluntary muscles of most warm-blooded animals fatigue without a slowing of the contraction process as a whole. At low temperatures there is observable a broadening of the muscle curve, caused by fatigue, which, in individual cases, may result in a minute lengthening of the curve as a whole.

4. The above facts suggest that the general physiologic differences between the muscles of cold-blooded and of warm-blooded animals are not due to immediate differences of temperature. The existence of a homothermal condition and the constant subjection of the skeletal muscle system to a uniform temperature, seem to impress on that system distinctive physiologic peculiarities.

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LANDRY'S PARALYSIS.

WITH REPORT OF CASE.*

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To the pathologist and clinical observer, acute ascending paralysis is a malady of more than ordinary interest. For nearly fifty years it has been known and studied, yet little light has been thrown on the essential pathologic process which is the basis of this remarkable disorder. Since Landry, in 1859, wrote his classic treatise on the subject, many efforts have been made to work out a solution of the perplexing problem, but with far from uniform results. Reasoning from the association of a flaccid paralysis, with preserved electric irritability and absence of trophic symptoms, Gowers advanced the theory of a toxin acting on the arborizations of the pyramidal fibers in the anterior horns of the spinal cord in a manner analogous to the effect of curare on motor-nerve terminations in muscle. This hypothesis, however, has never been reinforced by the conclusions of other investigators.

There are good grounds for believing that bacteria or the products of bacteria or toxic elements elaborated within the body having a selective action on motor neurons play an important rôle in the causation of this disease. Streptococci, staphylococci, diplococci and rod-like bodies resembling those of anthrax and typhoid have been noted by competent observers in the spinal cord in typical cases. It is quite conceivable that a variety of toxins may have in common the property of exerting a more or less profound influence on motor neurons, just as there are several well-known substances, organic and inorganic, which possess this singular power. The precise way in which these toxins affect the integrity of the motor elements has not been definitely determined. Considerable difference of opinion has always existed as to whether the motor structures in the cord or in the peripheral nerves were the parts primarily subjected to the morbid change. Some authorities, notably Ross, have maintained that the affection is a peculiar form of multiple neuritis. This view is based, not on the clinical manifestations, but on the finding of degenerative changes in the peripheral nerves in certain cases. Such findings, however, are by no means frequent, and in many cases the most careful scrutiny has failed to disclose any histologic alterations in either the peripheral nerves or spinal cord. Perhaps the most constant features found postmortem in typical cases are acute enlargement of the spleen and engorgement of the lymphatic glands, especially those of the mesentery, conditions which clearly indicate the invasion of the system by a toxic principle. As far as the nervous system is concerned, wherever the primary point of attack may be, it is evident that the pathologic change is an extremely subtle one; and of late the assumption has been gaining ground that in all typical cases this change affects the gray matter in the anterior horns of the spinal cord. It is probable, also, that in cases in which the toxicant is exceptionally virulent involvement of the anterior roots may follow, and a neuritic condition be induced in the peripheral nerves as a later and secondary consequence.

In the last score of years many important advances have been made in our knowledge of the physiology of the nervous system. In the light of this knowledge we are often enabled to reason from symptoms to the exact site of the pathologic process. The light gleaned from such knowledge in typical cases of acute ascending paralysis leads us to suspect that the motor cells of the anterior cornua of the spinal cord are primarily, and perhaps in most cases solely, concerned in the morbid action, and that with improved staining technic it will yet be possible to render apparent cellular changes which can not now be made manifest. It is probable that whatever changes the motor cells undergo are of a transitory character and of a nature to affect temporarily their function only, since the majority of patients who recover do so completely. Etiologic facts support in a striking way the theory of a toxemic state or dyscrasia as an essential and antecedent condition. By far the greater number of recorded cases have followed in the wake of sundry infectious diseases, local or systemic disturbances of a septic character, or have been

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

preceded by wounds, more or less trifling, which had served as points of infection. Some cases have been ascribed by certain authors to exposure to wet and cold, especially when this exposure was associated with alcoholism, but the precise way such causes operate is difficult to determine if we are to believe Landry's paralysis to be separate and distinct from multiple neuritis. If such causes were potent factors, it would be quite easily understood why most cases have been observed in males in the third decade of life.

So closely do many cases parallel multiple neuritis that it is not always easy to distinguish between the two disorders. In typical cases the diagnosis is based largely on negative evidence. Thus, in Landry's paralysis there is generally an absence of pain or tenderness along nerve trunks and of sensory impairment, trophic symptoms or electric alterations. The mode of onset of paralysis, too, is distinctive, being, as a rule, more abrupt, speedily completed and more profound, a distinguishing characteristic being the progressive implication of groups of muscles, commonly from below upward, and never beginning in both upper and lower extremities at the same time. Perhaps the cases which offer the greatest difficulty are those in which peripheral neuritis, to a greater or less degree, coexists with the spinal lesions. Such cases may have so much in common with multiple neuritis as to render a positive diagnosis practically impossible. Landry's paralysis rivals acute anterior poliomyelitis in the rapidity of its onset, although in the latter malady the affected areas, as a rule, are more circumscribed and the muscles are paralyzed *en masse* rather than in successive groups. The nature of the paralysis has a close correspondence in the two conditions, being in both flaccid, purely motor and with abolished reflexes, the sole distinguishing point of difference being the presence or absence of changes in electromuscular excitability.

A remarkable feature of this strange malady is its extremely high death rate, contrasting sharply in this respect with both multiple neuritis and acute anterior poliomyelitis. The recorded results of several groups of cases occurring in this country and in Europe give a mortality varying from 50 to 80 per cent. In the majority of cases a fatal result follows within a week or ten days. The incidence of bulbar symptoms is of grave significance, death, as a rule, occurring from interference with the cardiac or respiratory centers. The occurrence of mental symptoms is of evil omen, as indicating a system especially susceptible to toxic influence or a high grade of virulence of the toxic agent. Recessions of mental or bulbar symptoms are hopeful indications. The degree of rapidity of onset and the degree of completeness of the paralytic condition may be taken as a criterion of the intensity or the severity of the pathologic process, and consequently of the comparative gravity of a given case. Recovery in favorable cases is always slow, but frequently complete. In protracted cases, the paralyzed limbs may or may not undergo atrophy. Considerable uncertainty exists on this point; doubtless because of the rarity of the disorder so few opportunities have presented for studying the disease in its later stages. In two rather protracted cases I have seen, the patients had become quite emaciated, but the muscles had preserved, unchanged, their electric irritability.

The following case which had been under my observation for a period of two years well illustrates the characteristic onset and symptoms of Landry's paralysis, besides presenting some peculiar phases of the affection which are interesting and suggestive:

Patient.—J. B., a young man, aged 23, was born and reared on a farm near Saginaw, Mich.

History.—There is nothing particularly noteworthy in either his family or personal history. He had been a moderate smoker, but never addicted to intoxicating liquors in any form. At the age of 10 he had been operated on for appendicitis. Early in the summer of 1901 he was employed as fireman on the steamer *Mecosta*, sailing between Cleveland and Lake Superior ports. On June 26, 1901, while at Fort William, he, in common with the rest of the crew, was vaccinated by the health officer of that port. A very sore arm followed, with considerable swelling of the glands in axilla.

Course of the Disease.—In a few days he became subject to chilly sensations, alternating with transitory spells of fever. He suffered, too, from occasional attacks of vertigo, and from rather profuse sweatings. In spite of these symptoms, he continued at his work all the way down to Cleveland, which was reached ten days later. Here he began to experience in the right foot a peculiar feeling of weakness, which gradually ascended the limb to the hip. In a few hours a like sensation was felt in the left foot, and steadily progressed upward. Recognizing that something was seriously wrong, he entered the Marine Hospital in Cleveland. Next day the condition of weakness in the legs had deepened into absolute paralysis. The arms soon began to suffer in a similar fashion, the right being first affected from the fingers upward. Within a period of eighty-four hours all four extremities were rendered powerless, with flaccid muscles and abolished reflexes. The paralysis of the arms was slightly less profound than that of the lower limbs, but he was unable to feed himself or to use them for any purposes whatever. Up till this time, and during the further progress of the case, there was an entire absence of pain, of nerve-tenderness in any degree and of sensory symptoms of every kind. There was no headache or mental disturbance. The functions of the bladder were not interfered with. At no time were there any edema, glossy skin or epithelial changes; nor were the coldness and lividity of the limbs, so often seen in anterior poliomyelitis, ever noticed. Before the end of the first week symptoms appeared indicating extension to the medulla. The lips became paretic, and the tongue, palate and throat were likewise affected, so that speech and swallowing became seriously impaired. Diplopia appeared and eventually convergent strabismus and ptosis. The heart, too, began to manifest disturbance of its rhythm, with slight dyspnea and occasional spells of tachycardia. So deplorable was the condition of things that a telegram was sent to the patient's father, urging him to come at once if he wished to see his son alive. On the father's arrival, he decided to take the boy home, and accordingly a journey of nearly 300 miles was made by rail, with the patient on a cot in the baggage car. He stood the trip very well, and after being for a time at home entered the Saginaw Medical College Hospital as one of my clinic patients.

During the period of several weeks the case exhibited no material change in any respect. Except at the stage of onset, the temperature was not elevated, but occasionally showed a subnormal tendency. He had no pain and no particular distress aside from the difficulty in swallowing, and the utter inability to move a limb or to express himself by the use of speech. He slept well and took a fair amount of nourishment, but his muscles had markedly diminished in volume, more, perhaps, than could be accounted for by mere disuse, yet a response, more or less prompt, could everywhere be obtained to the faradic current. After two months the bulbar symptoms began slowly to recede, and two weeks later the dysphagia, dyspnea, difficulty of articulation and ocular derangements had wholly passed away. The paralytic condition of the limbs, however, remained unchanged. No contractures or pedal deformities had occurred. The first sign of motor activity appeared three months after onset, and consisted of slight flexor movements of the left arm, the limb latest to become affected. Similar movements were soon pos-

sible in the right arm, and a little later in the left leg; the right lower limb—the first to become paralyzed—lagged considerably behind its fellow. The flexor groups of muscles, it was observed, manifested evidence of returning power very largely in advance of the extensors, which had to be reinforced by mechanical and electric stimulation. This lack of correspondence between flexors and extensors produced a condition of wrist drop and foot drop highly suggestive of multiple neuritis.

Treatment.—In the general treatment of the case reliance was placed on strychnia, iron, arsenic, the hypophosphites and glycero-phosphate compounds.

Result.—The most gratifying results seemed to follow from a simple solution of the glycerophosphate of iron, together with moderate doses of strychnia. The return of muscular power, however, was an extremely protracted process, nearly eight months having elapsed from the time of onset before the patient was able to stand unaided, and fully ten months before he could walk more than a few steps without fatigue. After a year, his strength improved more rapidly, but nearly all of the second year was required in regaining something like his former vigor. In June, 1903, after two years of illness, he entered on the duties of a mail carrier over an R.F.D route, a vocation he has since followed satisfactorily in all weathers without the loss of a single day.

Previous to his illness his usual weight was 165 pounds; since his illness his weight has never exceeded 135 pounds. He manifests at times a previously unusual tendency to trip over words in speaking. He still exhibits slight weakness of ankle on both sides, most marked on right. The knee jerks have thus far failed to return.

MULTIPLE NEURITIS.

WITH REPORT OF FOUR CASES.*

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The principal interest in neuritis centers in the fact that, on the one hand, it resembles mere functional affections like neuralgia, which is a disease of the sensory nerve characterized by pain in the course of the nerve, or in its end distribution; on the other hand, it may be so extreme and grave in its manifestations as to be confounded with even the most serious affection of the cord itself. The term neuritis implies that there is an inflammatory condition of the nerve affected, though the diseased condition is not necessarily inflammation in its usually accepted sense, but may also be a degeneration, though with a tendency toward repair.

A neuritis, of course, may be confined to a single nerve when its symptoms will be those of the nerve affected.

As a matter of experience, however, we are more interested in that form of neuritis which affects many nerves simultaneously. This form we call multiple neuritis or polyneuritis. As regards causation, multiple neuritis follows various factors, which may be grouped as follows:

First. Toxic cases, due to the action of the poison derived from within the body. The poisons that produce most of the cases that we meet with are alcohol and mercury and lead, and occasionally arsenic; of course, there are many other toxic substances which produce this condition, but which will not be discussed here, as we see them less frequently.

Second. The second group is due to some agent acquired or developed within the body, that is, infectious forms which may accompany or follow most of the acute infections. As an agent which can give rise to this condition besides many other acute infections, especial attention should be directed to influenza, gonorrhea and the puerperal state. As a matter of knowledge, it is well known that the disease sometimes takes an epidemic form, beriberi.

Third. A large class of cases is due to general diseased states of the body, of whose origin we are not informed, such as rheumatism, acute diabetes, anemia, tuberculosis, syphilis, etc.

Fourth. There is another group of cases which followed exposure to cold or developed apparently without determinable cause.

As a type of neuritis due to alcohol, let me give the history of the following case:

CASE 1.—Mrs. M., a young woman, aged about 30 years, who had been suffering for three or four months previously with very severe pains and with growing weakness in the extremities, called me to see her at a time when she was bedridden and unable to move the feet. She was very emaciated, her digestion was very much impaired, examination of the viscera revealed nothing abnormal except the heart action, which was very much accelerated, with very weak pulse. The pupils reacted promptly. There was no involvement of any of the cranial nerves. She complained greatly of extreme sensitiveness, but there was little numbness and tingling, though previously she had complained much of these symptoms. Pressure along the course of the large nerve trunks was painful. The muscles were relaxed and flabby, both of the arms and legs. The wrists and feet presented the well-known drop condition. The wrist drop was very marked, as was also the foot drop. As is well known, this wrist drop is due to a paralysis of the extensor muscles. The legs were very much emaciated and power was practically abolished. The paralysis was so complete in the lower extremities, with an inflammation of the spinal cord, that myelitis might have been suspected. A negative symptom of great importance was the absence of any interference with the function of the bladder or rectum, and another negative symptom, to which Star calls attention, was the absence of pain or anesthesia about the trunk. As is well known in the various forms of disease of the cord, like myelitis, or locomotor ataxia, such disturbance of sensation on the trunk is present frequently.

In making the diagnosis, the family history was taken into consideration, and a most shocking state of affairs was elicited. The husband was a confirmed drunkard and had induced his wife to follow in his evil tendency, and, in fact, a little child of this couple had also been taught to drink now and then. The patient had been drinking steadily for two or three years previous to the time I saw her. She finally developed a condition of mental confusion and uncertainty as to her whereabouts, and exhibited a certain hebetude of mind which is a very frequent accompaniment of severe forms of multiple neuritis, especially of the alcoholic type, and is known as Korsakoff's insanity.

There was great loss of memory of recent occurrences and much insomnia; later there were hallucinations of sight and hearing. The knee jerks were gone, as were also the ankle jerks. The paralysis began in the feet and legs, extending upward rapidly, and soon involved the arms and forearm. The muscles did not respond to the Faradic current, and when tested with the galvanic current showed the presence of degeneration.

Only a strong current elicited a contraction. There was great sensitiveness to manipulation, and the tactile sense was very much blunted. This case was so extreme and the general condition of the patient so depraved that all attempts at treatment were futile and death ensued, due to collapse.

Let me now give you an example of the milder form, in which the toxic agent was the poison of influenza, under the head of Group 2:

CASE 2.—Mr. B. came to his physician's office complaining of great pain in the lower extremities, which had not yet become severe enough to prevent him from walking. This pain in the course of two or three days increased and there was progressive

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

loss of power until patient was unable to walk and resorted to the bed. He was then referred to me about three weeks later, and when I saw him the legs could not be moved. There was much pain along the thigh and calves, the skin was very sensitive to touch, the patient could not flex the feet or the legs, and in attempting to extend or stretch the feet the very slightest pressure would overcome the effort.

The knee jerks were very feeble, but the muscles were not as yet atrophied; the distribution following the rule of multiple neuritis was quite symmetrical. The upper extremities were not involved. The patient was afflicted with an aortic lesion and developed at the same time a pneumonia, which ran a very irregular course. It was of the bronchopneumonia type and lasted about three weeks. There was no definite crisis. The neuritis ran a very favorable course, the knee jerks reappeared after about six weeks, although power and ability to move the legs slightly appeared before the knee jerks were re-established. It is rather peculiar for multiple neuritis following grip that the sensory symptoms are more pronounced than the motor symptoms and there is complete recovery usually within six weeks. The patient was able to move about, had perfect control of the legs, and there was no marked tendency to ataxia, although in the first weeks of my observation of the case there was some incoördination of movement. These cases of multiple neuritis following grip have been described by several writers, among them Mills and Star.

The third case which I wish to describe belongs to the third group, and was due to some condition of lowered nutrition of undetermined nature.

CASE 3.—Miss W. was referred to me by Dr. Belt, of Milford, Ohio. Six months previous to the time I saw her she had had pain in the epigastrium and was treated for what was evidently ulcer of the stomach. There had been pain, tenderness over the epigastrium and also over the dorsal spine, vomiting, increased acidity and emaciation. Under appropriate medical treatment this condition was recovered from, but the patient was left in a very profoundly anemic state. She was brought to the city in a pitiable condition of exhaustion with very marked hysterical mental condition. She was extremely emaciated, the arms were but slightly involved as regards movement, although she complained of great pain and marked sensory disturbance, burning and tingling and numbness in the upper extremities.

The legs were completely paralyzed, the knee jerks and ankle jerks could not be obtained. The patient was unable to move the legs at all except from the hips, although there was a slight movement in the toes. There was no disturbance of function of bladder or rectum. There was no pain or anesthesia over the trunk. Tactile sensation was diminished over the legs on both sides, but not over the thighs to any extent, but pain and temperature sense were intact.

There was some loss of muscle sensation, that is, she did not know the position of the big toe when first seen. The patient was under treatment at Christ Hospital for three months and on forced feeding and very careful electric treatment, in conjunction with tonics and, of course, rest, a certain amount of power returned.

The muscles were still flabby and wasted, the response to the interrupted current was still quite feeble, and the galvanic current produced a slow wavelike response, indicating that recovery from degeneration had not yet persisted very far.

After a further three months the patient was so far recovered that she could walk around the room, with the aid of crutches, and weight had increased very much; all pain had disappeared. Her gait was very typical for multiple neuritis. On account of the weakness of the peronei and the anterior tibialis, she lifted the whole foot as if she were tripping over her own toes, so-called steppage. She is at present almost fully recovered. This case was so extreme that a suspicion of a cord lesion due to either pernicious anemia or to subacute inflammation of the cord was entertained; however, the character of the sensory disturbance, the evidence of slight power of movement and the preservation of bladder and rectum functions, combined with other symptoms, enabled me to exclude any other condition than a grave multiple neuritis.

The fourth case was one which I saw with Dr. E. W. Mitchell of Cincinnati, in consultation.

CASE 4.—This was a little boy about 8 years old. There had been no previous history of infectious disease or of any other illness so far as known. The condition came on more or less acutely without any fever. The child complained bitterly of pain in the legs and arms, and pressure along the thigh and calves elicited shrieks. Attempts to move the legs produced great pain; the reflexes at the knee were absent. There was no evidence of any swelling of the joint, no redness, no fever. Acute rheumatism could be readily excluded.

The little patient was unable to walk, and I was informed that only the slightest motion was possible with the legs, though the arms were not involved to nearly the same degree. The involvement of both extremities, as well as lesser degree of involvement of the arms, the absence of marked wasting, the intact state of the sphincters and the absence of disturbance of sensation, except that of hypersensitiveness, enabled me to rule out in the case of this little child infantile spinal paralysis, both of the cord and of the brain, as well as myelitis. The disturbance was too marked, and the pain on pressure and on attempting movement was too pronounced to countenance a diagnosis of hysteria. I mention this because not infrequently in children we encounter cases of hysteria where no condition of paralysis is simulated.

I have quoted these four cases as fairly illustrating the different types of multiple neuritis. I do not wish to make this paper unduly long, but would like to call attention to some points in the differential diagnosis.

Neuralgia could generally be excluded, as the symptoms are sensory in character and never lead to paralysis, though sometimes there is inhibition of movement on account of pain, but it is not persistent. In nearly all cases of neuritis, even of single nerves there is an involvement of the motor fibers of the same degree as the sensory fibers. The presence of hyperesthesia and various forms of paresthesia is quite marked. The distribution of the anesthesia in well-developed cases corresponds to the distribution of the affected nerves as they course toward their periphery, and is unlike the distribution of the anesthesia of the lesions in the cord which occupies distinct zones or segments. The symmetrical distribution on the two limbs is also quite characteristic. Time is too short to take up the peculiarities in the distribution of the paralysis. This may come on quite gradually or so rapidly that within a couple of weeks the patient is helpless.

In some cases it does not advance to extreme feebleness. The extensors of the wrist and fingers and the peronei and the anterior tibial muscles in the legs are muscles first affected. It is only in very severe cases that the diaphragm or the facial muscles are involved. In my alcoholic case, above quoted, toward the end there was paralysis of the muscles concerned in swallowing. In children we must be careful to exclude infantile spinal paralysis, so-called anterior poliomyelitis. It must be remembered that as between myelitis and neuritis, if the attention be directed to the following points, the two need not be confused; in neuritis the function of bladder and rectum are maintained, girdle sensation is very rare, bed sores and cystitis likewise.

In neuritis a paralysis begins in the legs and forearms at the same time, and usually does not extend to the thighs and arms and rarely touches the trunk. It is only in the fatal cases that the abdominal and respiratory muscles are involved.

In neuritis the anesthesia is chiefly observed in the hands and feet, in the forearms and legs, and rarely reaches the arms and thighs. Tenderness in the nerves and muscles of the extremities belongs to neuritis, but not to myelitis. It ought not to be difficult to separate neuritis from locomotor ataxia. In practice it will be well to remember neuritis when attempting to establish positively the diagnosis of acute articular rheuma-

tism, but in the latter the febrile course and characteristic appearance of the joints and the well-known tendency to the fugacity of the symptoms ought to prevent any confusion.

PROGNOSIS.

Except in the acute, grave cases, the prognosis is relatively very good. Of course, in those who are steeped in alcohol, lead or arsenic, with impaired constitutions, we can hope for less complete or no recovery. With patience and care a favorable prognosis may be pronounced in most cases of multiple neuritis.

TREATMENT.

Rest and appropriate nutrition and the removal of exciting cause wherever possible are the principal indications. In the early stages, when the disease has become well established, Star thinks well of the salicylates. The hyperesthesia should be combated by wrapping the parts in wool or light bandages or by applying soothing applications. Malaria, syphilis and lead require the usual treatment.

In alcoholics much skill is required in controlling the amount of alcohol that should be given and determining when it should be withdrawn. Where there is any chronic condition I agree with Star that we obtain the best results from strychnin, arsenic and the glycerophosphates, gentle massage, warm baths, electricity, and only the galvanic current should be used. The object of these latter remedies is, in the first place, to prompt a repair of the diseased nerves and to keep the muscles in a state of good nutrition while such repair is taking place.

The object of this paper has been to call the attention of the profession more particularly to this form of inflammation or degenerative changes in the nerves and to point out in a brief way the characteristic features of multiple neuritis as distinguished from disease of the spinal cord.

DISCUSSION

ON PAPERS OF DRS. M'GREGOR AND WOLFSTEIN.

DR. H. T. PERSHING, Denver, reported briefly two cases which he saw recently and which had some bearing on the subject. In one case the patient began to have the unmistakable symptoms of multiple neuritis affecting both legs below the knees, with severe pain, preventing sleep at night, and gradual weakening of the muscles, with no disturbance of the bowels or bladder, and no affection of the trunk or of the arms. It was recognized as a case of multiple neuritis, but it was quite difficult to find the cause. The man was a metallurgist and had invented a process for the separation of different kinds of ore. That led his physicians to suspect that arsenic might be the cause of the symptoms, especially as the arms were not involved and the pain was prominent. Examination of the urine showed that the man constantly eliminated a small quantity of arsenic. Very small doses of iodid of potassium seemed markedly to increase the pain, so that he objected very decidedly to taking it. The family physician and Dr. Pershing both thought at first that this might be imaginary, but they came to the conclusion that it was not, and that the increase in the pain could be explained as Gowers explains the aggravation of the symptoms due to mercurial poisoning, as when iodid is given it makes the metal more soluble. This man made a complete recovery, although he had to be kept away from the ores that contained arsenic. In the other case, a man whose character was in general irreproachable, during the first week in July did an unusual amount of muscular work; he carried some boards, sweated profusely, and was rather exhausted by the heat. On the Fourth of July he was with some friends, and they drank a considerable quantity of beer, which he said was stale, and ate some lobster. He had a very severe attack of acute indigestion; he vomited and showed every indication of ptomain poisoning, and the prostration was great. Before he recovered from that attack, which lasted two or three days, he noticed a weak, heavy feeling in the legs, which gradually developed into numbness and very pronounced weakness, so that about two weeks later, when Dr. Pershing saw him in consultation, he had the typical symptoms of multiple neuritis, and was barely able, with the greatest difficulty and pain, to walk about the room. The arms were slightly affected and there was some paralysis of the wrists and fingers. The prognosis seemed favorable and he made a steady and complete recovery. About a year later the knee jerks were normal.

DR. D. R. BROWER, Chicago, said that in acute Landry's paralysis his observations have led him to suppose that the great majority of cases so diagnosed are cases of multiple neuritis. He thinks that too much importance is sometimes attached to the condition of the bladder and rectum in differentiation. He has seen cases in which for a time control of both of these functions was lost, and in which the subsequent history made the question of diagnosis of multiple neuritis very easy. This is especially true of cases in which there is some mental disturbance. While it is undoubtedly the usual condition that the motor and sensory symptoms go hand in hand, yet there are cases in which there is an entire absence of sensory symptoms, and these cases are by no means rare. There is a form of multiple neuritis that requires more attention on the part of the profession than it has so far received; that is beriberi. In the republic of Panama in December, 1904, it was one of the principal causes of death, and it prevails to a very large extent in all our recent territorial acquisitions. Dr. Brower has seen a few cases in which recovery seems to have been promoted by large doses of quinin in connection with strychnia. The cause of death in Landry's paralysis, as in multiple neuritis generally, is circulatory and respiratory failure, and he thinks that all the cases should be very carefully watched with reference to these important functions and timely aid given. The next important principle in treatment is careful attention to elimination.

DR. WILLIAM HOUSE, Portland, Ore., asked Dr. Wolfstein whether the use of antitoxin has increased or decreased the number of cases of postdiphtheritic neuritis.

DR. H. G. BRAINERD, Los Angeles, asked Dr. Wolfstein whether or not in those unfortunate cases which resemble Korsakow's insanity he noted any falsification of memory, as well as loss of memory. The difficulty of making a diagnosis is great in certain cases. Dr. Brainerd remembered watching with interest a case in which there was a question as to whether or not it was ordinary chronic neuritis or leprous neuritis. It was nearly a year before it was decided that it was a case of leprous neuritis. Dr. Brainerd watched the case for a period of six or seven years, during which time the disease did not make much progress, and no other evidence of leprosy was shown. Recently he had under his care a patient with multiple neuritis, not a young man, whose occupation, that of a cement contractor, kept him out of doors most of the time. He was of such rugged build that he would not be supposed to be susceptible to changes in the weather. For several years he had been in the habit of using bromo seltzer daily. When Dr. Brainerd first saw him, two weeks after the beginning of the attack, his face was purple and his finger nails were blue. As there had been no unusual exposures to inclement weather, and he could learn of no other cause, Dr. Brainerd believes that the toxic effects of the bromo seltzer were the cause of the neuritis. Recently he saw a case of neuritis in a Baptist deacon just past middle life, and who, from his connection with the church, might be supposed to be beyond reproach. Thinking that the man might be in the habit of taking something containing arsenic or alcohol, Dr. Brainerd asked if he were using anything of the kind, at which the family became very indignant, but the man finally admitted that he was in the habit of taking a bottle of vinegar bitters every day or two, and had been for a period of many months. This was undoubtedly the cause of his neuritis.

DR. H. A. TOMLINSON, St. Peter, Minn., called attention to the fact that bromo seltzer is said to contain acetanilid.

DR. ROBERT MCGREGOR, Saginaw, Mich., thinks it is desirable that such cases should be reported and postmortem findings

recorded wherever possible. The systematic study of a satisfactory series of cases would enable physicians to know more clearly the line of demarcation between Landry's paralysis and multiple neuritis. It is, of course, absurd to suppose that cases of this character should conform to any conventional type. There will be considerable variations, but there are three points which Dr. McGregor believes are fairly constant and which serve as guides in the diagnosis of any form of Landry's paralysis: 1, The toxic element as a causative factor; 2, the implication of the motor elements of the spinal cord; 3, rapidly ascending paralysis and, in rare cases, descending in character—a paralysis which is flaccid and purely motor and in which the electric irritability of the muscles is little, if at all, changed.

DR. DAVID WOLFSTEIN said that a diagnosis of Landry's paralysis should not be made simply because of the severity of the symptoms. He declared that it is unfortunate that the profession has departed so far from the ideas of Landry. If one would stick to Landry's original definition of the disease as one involving only the motor nerves and rapidly ascending, very often occurring in cases in which there is no disturbance of sensation, there would be less confusion. Dr. Wolfstein said that Dr. Brower's criticisms are hardly justified. In these cases of neuritis accompanied by insanity there was no actual loss of function of the bowels or bladder. In reply to a question, he stated that there is no doubt that since the use of antitoxin the number of cases of postdiphtheric paralysis have greatly decreased.

PHYSICIANS AND PROPRIETARY MEDICINES.

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There are several particularly objectionable features connected with the proprietary medicine evil, to which it is desirable to call attention with a view to securing the co-operation of the great body of practicing physicians in obliterating them so far as possible. Every one acknowledges that a great number of secret proprietary medicines are utterly worthless and, in fact, harmful; hence all preparations which do not emanate from thoroughly reputable firms should be viewed with reserve—if not actual suspicion—until they have been examined by competent, unbiased men.

It should also be remembered that the testimonials given are often of questionable value, because physicians and professors in certain medical colleges may sometimes be induced to give testimonials on insufficient knowledge. Finally, attention should be called to the well-known fact that mystery exerts a strong influence on the average mind, and a form of mystery may be said to be the chief stock in trade of many exploiters of the clap-trap compounds, now widely used.

While there are many manufacturers who are doing valuable work—and to them this criticism does not apply—there are hundreds of men, anxious to occupy the profitable field of proprietary medicine manufacturing or exploiting, but wholly lacking the ability and desire to pursue original research, who merely resurrect obsolete remedies, dress them anew in garb and name, and claim for them properties as marvellous as those of Aladdin's lamp.

Others use some well-known substance, acetanilid, for instance, as a basis for compounds with pseudo-scientific names, claiming entire originality and extraordinary therapeutic properties for their products. It is truly amazing that these compounds should have attained such wide use by physicians in view of their potency for harm and the extreme simplicity of the acetanilid test.

Manifestly, every physician owes it to himself and to his patients to recommend only such preparations as are attested by men whose reputation for solid attainment and integrity is beyond question.

It is hardly necessary to say that no one is justified in prescribing any remedy before he has satisfied himself of its clinical nature and pharmacologic action, so far as can be learned. There are so many trained clinicians in the hospitals who have excellent facilities for intelligent tests—so many pharmacologists with elaborate equipment, devoting all their time to laboratory investigestations, that there is no excuse for the manufacturer seeking testimonials from those who are not in a position properly to test the effects and efficacy of so-called remedies.

It is perhaps in regard to the third point, that of mystery, that the warning is to be most strongly presented. The busy practitioner is unable to keep pace with the rapid additions to the terminology of the various branches of medical science, such as the Ehrlich theory of immunity, hence he becomes accustomed to reading articles by men of repute, which may not be perfectly intelligible to him, and later he accepts with equal readiness the statements of nostrum vendors, who, adopting the terminology but not the meaning of science, give pretended concise descriptions of the methods of preparation of their own wares, in mere word jumbles, intended to impress the unwary, while the facts which are the essential ones, viz., the success of the medicine in the treatment of disease, are stated with more apparent child-like simplicity than veracity. To show how this truly astounding fraud is frequently perpetrated, I mention the following:

Circulars of three proprietary remedies, which have been widely distributed among physicians, and which pretend to give most concise details of preparation, involving processes of metabolism, actions of enzymes, etc., were submitted to three well-known physiologic chemists with a request for a perfectly simple explanation of the reading matter. The answers were essentially similar in each case, and were to the effect that the pretended concise descriptions were largely mere word jumbles devoid of meaning, or else a tissue of falsehood.

Can the average physician discern truth in that which is false or meaningless to the expert?

How the conspirators must laugh at the ease with which they can dupe educated men with gibberish, while pretending to appeal to their profundity!

It is as easy to use intelligible and simple language in describing the method of preparing an article as it is in stating clinical results, and every physician should refuse to be influenced by an advertisement which he can not readily understand, and which for that very reason may be making a bid for our too ready credulity.

Medical Ethics.—The dissatisfied persons who wish to discharge their medical attendant and employ you, will sometimes contend that the rules relative to taking charge of patients, recently under care of another physician, are harsh and unjust, and peculiar to the medical profession. Neither of these statements are true, for our custom is identical with that which prevails everywhere among all classes of people, which requires the formal discharge of the old employé before a new one can take his place. Besides, no person, whether menial, mechanic or physician, can fill a vacancy till one exists.—Hart, in *Journal of Kansas Medical Society.*

THE NOMENCLATURE OF PROPRIETARY MEDICINES. THE CRUX OF THE SITUATION.*

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It is related of an old-time country practitioner, in a southern state, who not only had faithfully served the community in attending to the first arrivals, but also had usually been called on to name the little newcomers, that his patience finally became so exhausted that when appealed to in an especially urgent case, he petulantly retorted, "Oh name the twins Belshazzar and Beelzebub!" "Oh pa!" gleefully shouted the mother, "the doctor has named the babies Belshazzar and Beelzebub!" "Wal!" responded the fond father, "if the kids be only as good as their names they will be all right!"

The incident may or may not be true, as it may or may not have any bearing on the naming of proprietary medicines. Let us see. The names looked imposing and mysterious, they had a suggestive and familiar sound, possessed a peculiar euphony, and in this case were thought proper names because the persons using them did not know what they meant or what they stood for.

MULTIPLICATION AND SIMULATION.

Is there any difference in the methods of naming the vast majority of proprietary medicines? Take a few examples:

Aseprol	Bromalin	Ferratin
Aseptol	Bromamid	Ferratogen
Aseptolin	Bromolein	Ferrhemin
Aseptin	Bromidia	Ferrinol
	Bromipin	Ferripton
Albargin	Bromol	Ferroleum
Actol	Bromopyrin	Ferropyrin
Argentamin	Bromosin	Ferrosol
Argentol	Bromphenol	
Argonin		Salacetol
Collargol	Dermatin	Salacetin
Ichtargan	Dermatol	Salifebrin
Itrol	Dermogen	Saliformin
Largin	Dermol	Saligallol
	Dermazon	Saliphene
Hematin		Salit
Hematogon	Iodipin	Salophene
Hemoferrogen	Iodocrol	Salochinin
Hemoferrin	Iodoformal	Salocoll
Hemoform	Iodoformine	Salocreol
Hemogallol	Iodoformogen	Salol
Hemol	Iodoformsalol	
Hemorrhol	Iodogenol	Tannalbin
Hemostate	Iodolen	Tannalborin
Hemotrophine	Iodolin	Tannapin
	Iodophenin	Tannformal
Lyptol	Iodosin	Tannigen
Lysol	Iodosolvin	Tannipyrin
Lysetol	Iodothyrin	Tannoform
Lycorin		Tannochrom
Lygosin		Tannocoll
Lysidin		Tannopin
Lysitol		Tannosol
Lysoform		

LACK OF SYSTEM.

Is there anything to suggest that a system or plan has been followed in naming these any more than in the naming of apartment houses, sleeping cars or breakfast foods? Names of the latter often rival those of proprietary medicines, the following examples having been observed recently: A house called "Eudoxin," for a well-known synthetic; "Quantzinteco-matzin," the name of a sleeping car on the Oregon Short Line, might be a new name for hexamethylene tetramin, and "Apetizo," the iron food, may be mistaken for apetol, the strengthener that strengthens, a wonderful discovery composed of *Nux vomica, Gentiana purpurea, Calumba jateorrhiza, Quassia amara lignum, Prunus virginiana, Prinus verticillatus, Simaruba amara, Spiræa tomentosa, Cinchona rubrum, Sumbul moschatus,* aurantii cortex, aromatics, vinum xericum fortior; the "tonic that tones"; that "gives birth to an appetite"; made in Danbury, Conn., which in former times was famous through "Newsman" and as the home of "Synthetic Myristica," but is now devoted to the exploitation of the medical profession through a medical journal with half a dozen anonymous pseudo-chemical companies on the side.

CONFUSION WORSE CONFOUNDED.

Besides these there are preparations entirely distinct in character, with names almost similar, e. g.:

Mercauro, Mercurol, Mercuriol.
Euphorine and Europhene.
Papain and Papin
Benzosol and Benzozon.
Glycozone, Hydrozone and Liquozone.

The last illustrious trio have demonstrated the dangers to the manufacturers in selecting names in the present haphazard, slipshod manner. The proprietor of the first two of the three alleges that the name of liquozone is unwarranted and misleading, and liable to confusion with his own. The liquozone proprietors charge business rivalry as the sole motive for the accusations against their famous germicide

"Normalin" is a serum preparation of arsenic, administered internally in teaspoonful doses, for which formalin is liable to be dispensed, and "Lavolin" is the trade name for liquid petrolatum, exploited as the solvent for agents recommended in spray medication exclusively in a certain work on rhinology. Pharmacists who have never heard of lavolin naturally dispense lanolin instead, and thus innocently became partners in the absurdity of causing a sufferer to try to accomplish the feat of spraying an ointment through an atomizer.

SCIENTIFIC NOMENCLATURE.

It should be needless to point out to men engaged in any scientific pursuit the necessity for a scientific nomenclature. Without systematic terminologies, the sciences contributing to pharmacy can neither be studied nor learned. What botany, pharmacology or chemistry would be without scientific nomenclatures is best answered by remembering what they were before such were evolved by Linneus, Fluckiger and Berzelius. What progress was made in medical science until systematic terminologies were introduced in physiology, pathology and anatomy? Science is universal; without a universal language it can not progress. It is a fundamental object and purpose of all sciences to establish a universal language through more or less systematic terminologies. To deny the necessity for nomenclature in pharmacy is to deny that it is a science. But what are the facts? Pharmacy, or at least its original votaries, aided in developing terminologies, and in two of the sciences named the modern nomenclature was devised by pharmacists.

THE NOMENCLATURE OF THE PHARMACOPEIA.

But before this period and beyond the present sciences, the formation of pharmaceutical terminology began, which finds to-day expression in the pharmacopeias of all nations. The pharmaceutical nomenclature, as represented by the Pharmacopeia, has not only the pres-

* Read at the Annual Meeting of the American Pharmaceutical Association, Atlantic City, N. J., Sept. 6, 1905.

tige of tradition and almost universal harmony, but is fortified through legal enactments in every country in the world. Each of the thirty different classes of preparations of the Pharmacopeia has a distinct meaning, and with those additional in the National Formulary they afford nearly every form in which medicinal agents may be desired. Why are they ignored? Have the terms aqua, liquor, spiritus, elixir, tinctura, fluid extractum lost their meaning? Do the old names, pulvis, pilula, etc., sound too commonplace; or is it that their simplicity would be incompatible with the claims of originality or novelty or wonderful therapeutic virtue of the products of these *début de siècle* ideas? Or, perish the thought, is it that the manufacturers are not acquainted with pharmaceutic terms, or do not know of the existence of the Pharmacopeia?

THE MOTIVES.

Possibly, probably the scientific terms are ignored in order to impose more easily on physicians, to pander to their convenience and lassitude, to secure monopoly of products through trade-marks, to intimidate pharmacists with the cry of substitution, and, finally, to exploit the public with cure-alls.

Take these well-known proprietary medicines originally advertised to physicians exclusively:

Antikamnia	**Pepto-Mangan**
Bromidia	**Scott's Emulsion**
Fellow's Syrup	**Vin Mariani**

Would they have gone to the public if they had been known under the following titles, with the name of the manufacturer or other device as a trade-mark to indicate the brand?

Pulvis Acetanilidi Compositus.
Mistura Chloralis et Potassii Bromidi Comp.
Syrupus Ferri Mangani Quininæ et Strychninæ Comp.
Liquor Ferri et Mangani Peptonatus.
Emulsum Olei Morhuæ cum Hypophosphitibus.
Vinum Erythroxylon.

While only two of the above, antikamnia and Scott's emulsion, are advertised directly to the public, all, except bromidia, are used for counter and pyramid window display by "cutters" and department stores.

TRADE-ADVANTAGE DELUSIONS.

Intelligent physicians are beginning to realize that they may just as well prescribe peruna and other "patents" at once as to patronize proprietary medicines with trade-names. Many also refuse to prescribe any trade-name article for fear that they, or the pharmacist, may confuse the names and serious results may follow. And yet, in the face of this undeniable awakening of medical men, a firm of chemists of the highest standing has recently devised the following meaningless, empiric names for three articles of its manufacture: Duotonal tablets, quartonol tablets, sextonol tablets.

"Tonol" stands for glycerophosphates, and the prefixes refer to one number of different kinds of glycerophosphates, salts of alkalies, contained in each tablet. Now, these names have been devised on the assumption that physicians will appreciate them, owing to their brevity and euphony; on the other hand, it is evident that these names will not appeal to the thinking physicians, as they would under pharmaceutical titles, with the name of the illustrious founder of the firm as the trade-mark.

THE NAME IS THE BEST TRADE-MARK.

The name of the manufacturer or some distinct symbol or device is the only trade-name affixed to the scientific title, that should be used to designate a brand or make of a product. When, however, a symbol of universal significance and profoundly reverent traditions is through a sordid judicature permitted to become the trade-mark of a particular line of manufacture, the necessity for some scientific system for the selection of trade-marks becomes evident.

The protection of the public is the primary object of a trade-mark; to aid the purchaser in distinguishing the brand or "make" he desires from all other brands or "makes." Naturally, it is the maker's highest prerogative to protect the public in its right of selecting his brand. What should he choose for this distinctive designation rather than his own name—his as against the world?

But greed and avarice lay their vandal hands even on the symbol of the ancient republic of Helvetia, and trail this venerated emblem in the dust of venal trade, by the grace of the state of New Jersey. The public must be protected against such vandalism; the medical profession is finally beginning to realize its anomalous position, and mindful of the dangers of Scylla and Charybdis, will soon refuse to recognize trade-names for medicines, and the pharmacist—well, he is familiar with the fact that the highest ethically exploited trade-name article keeps company in the price lists of wholesale druggists with Lydia Pinkham, peruna and Pierce of Buffalo. The wholesale druggist is the only purveyor of medicines whose fiduciary frame of mind realizes that all articles with trade-names are primarily designed for trade.

THE REMEDY.

Since none of the parties mostly concerned, the public, the physician or the pharmacist, desires the perpetuation of trade-names, why should the manufacturers be allowed to use them; or rather, why should not physicians and pharmacists refuse to handle any trade-name article? Although this position may be brought on through agitation and education, the process will be too slow. The thing to do is to carry a case for infringement of a trade name to the Supreme Court of the United States and get a decision in line with former cases, such as castoria and syrup of figs, which will once and forever prevent exclusive use of a coined name for a medicine when there is no other name by which such article may be designated. The nomenclature is the crux of the proprietary medicine question; its reformation will be a boon to the physician and the salvation of the pharmacist.

THE DENTITION OF MAMMALS WITH REFERENCE TO THAT OF MAN.*

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In response to the kind invitation of your president, I have ventured to bring before you some of the results of recent researches into the tooth-genesis in mammals including that of man. Though my work on primate dentitions is still incomplete, I shall endeavor to summarize some of the problems to which I am paying particular attention, in the hope that an appreciation of the gaps in our present knowledge may suggest lines of investigation to other workers.

Before homologies and methods of tooth replacement

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

can be adequately interpreted it is necessary to have a clear idea of the number of dentitions represented in the *Mammalia*. The introduction by Owen of the terms "monophyodont" and "diphyodont" indicated the state of knowledge in his day, but with the application of histologic methods to the problems of comparative odontology, the words lost much of their original significance. The marsupials, regarded by Owen as monophyodont, were shown by Kükenthal to be really diphyodont since there were down-growths of the dental lamina to the lingual side of the functional teeth, a potential second series which, however, never become functional. The result of this discovery was to interpret the functional teeth of marsupials as belonging to a persistent milk series. This view became current and is still to be found in all text-books. Subsequently, in the light of this interpretation the lingual rudiments, discovered by Leche in *Myrmecobius,* were regarded as prelacteal. Thus marsupials are now known to possess representatives of three dentitions, the middle series alone cutting the gum and usually regarded as a persistent milk dentition, but which to my mind is capable of another and more satisfactory interpretation.

Downgrowths of the dental lamina, similar to those found by Kükenthal in *Didelphys* have been discovered in a number of other mammals in which two sets of teeth are functional, e. g., man, dog, seal, hedgehog and others. The number of instances in which such post-permanent vestiges exist, warrants the belief that they are of very frequent, if not universal occurrence.

Apart from the doubtful interpretation of the so-called prelacteal vestiges in the marsupials, such are definitely known to occur in other mammals with two functional dentitions, for example in the pig and in man. In the latter they were first discovered by Röse. I have also noted their existence and they are shown in the accompanying microphotographs. The epithelial masses become later altered in character and in a fourth-month human fetus the cells become granular and have the appearance of undergoing calcification. Unfortunately, I have as yet been unable to obtain sufficiently well preserved material to speak definitely on this point. It is interesting to notice in this connection that Professor W. B. Scott of Princeton has recently found three definitely calcified dentitions in *Nesodon.* Should it ultimately be shown that there is an attempt at calcification in the human prelacteal vestiges, it would furnish additional evidence that the primates have branched off very early from the common mammalian stem, as Wiedersheim has suggested.

There can be no question, I think, that there is a general tendency to the suppression of the earlier deciduous dentitions as evidenced by the *Rodentia,* some of the *Cynoidea,* etc. Taking these two sets of facts in conjunction it would appear to me that the simplest and most satisfactory interpretation of the condition in the marsupial jaws is that the three series represent: 1. A vestigial milk set, the prelacteal of Leche; 2, a functional persistent series; and 3, post permanent vestiges, the downgrowths of Kükenthal. A similar line of reasoning applies also to the condition found in the *Cetacea.* Such an interpretation would bring the dentition in these two classes into line with that of the *Eutheria* generally, and would clear away many of the difficulties arising from the present usually accepted views.

Shortly after putting forward this hypothesis in 1896 additional welcome evidence was advanced by Wilson and Hill who independently arrived at a similar conclusion, as a result of their investigations into the "Development and Succession of the Teeth in Perameles."

This position was subsequently attacked by the late M. F. Woodward and also by Deppendorf, mainly on the theoretical grounds that the rudimentary condition in which marsupials were born tend to the preservation of the earlier dentition. This objection to my mind is unconvincing, as the marsupial at birth is brought into conditions very different from those of the young reptile which has from the very first to forage for itself, whereas the marsupial is transferred at once to the mammary gland and is thus fed for a considerable time and so the necessity for the retention of the earlier dentition is absent and has led to its disappearance.

The next point to which I would draw attention is the anomaly in the tooth change in the posterior premolar region. This anomaly consists in the fact that, whereas in the anterior premolars these teeth are preceded by deciduous premolars of a similar pattern, in the case of the posterior premolar the milk predecessor is molariform in pattern. This condition, so well known in the dog, occurs in a considerable number of mammals belonging to other classes. It is known to occur in the *Marsupialia,* (in which this tooth is the only one to be replaced) in the *Carnivora, Insectivora* and *Rodentia.* Topinard has drawn attention to the molariform pattern of the deciduous posterior premolar in man; it seems therefore likely that we have here the same anomalous condition, and this point I am at present investigating.

I think we are dealing here with a case of apparent succession only, by which I mean that the deciduous posterior premolar is not the true morphologic predecessor of ppm^4, as in the case of other teeth. M. F. Woodward has stated that in the kangaroo the replacing tooth belongs to the same series as pm^4 and $pm,^4$ and the same I find holds true in the guinea-pig. In both these cases it is interesting to note that the successional tooth develops slightly in front of its predecessor and drops backward into its place, whereas in all other cases it develops behind the tooth which it replaces and therefore drops forward. A similar condition is to be met with in the *Insectivora* (Woodward) and in the dog (Tims). From a careful study of all the facts I have been led to the conclusion that the apparent deciduous posterior premolar is in reality the first of the molar series, the true morphologic dpm^4 being crowded out. The cause of this condition is I believe, to be found in the progressive shortening of jaw in relation to its breadth. Take the case of the marsupials, the time at which the single deciduous tooth is shed varies considerably; in some it is shed "in utero" as in *Dasyurus,* in *Thylacinus* before the animal leaves the mother's pouch, in others not until the animal is full grown as *Didelphys* and *Perameles,* while in *Myrmecobius* no tooth change is known.

The ratios of the palatal breadth to length works out as follows: *Dasyrus,* 1:1.6; *Thylacinus,* 1:2.03; *Didelphys,* 1:2.10; *Perameles,* 1:2.2; *Myrmecobius,* 1:3.2. It is worthy of note in this connection that *Myrmecobius* possesses at least five upper molars, a number in excess not merely of all other marsupials but of all other mammals. The same results are found in the diprotodont series.

I have elsewhere[1] shown that among the *Insectivora*

1. Jour. Anat. and Phys., Vol. xxxvi, p. 321.

parallel conditions are to be met with through such forms as *Centetes, Ericulus, Echinops* and *Solenodon*, in which the ratios of the palate breadth to length are as follows: *Centetes,* 1:2.76; *Ericulus,* 1:1.6; *Echinops,* 1:1.5; *Solenodon,* 1:1.1...*Centetes* has one more molar than any other insectivore, thus occupying a similar position to *Myrmecobius* among marsupials.

With regard to the rodents I have come to a like conclusion from a study of the tooth-genesis, viz.: that dpm4 is in reality the first tooth of the molar series. As already stated Topinard has drawn attention to the molariform character of the posterior deciduous premolar in man. Whether the tooth replacement is of the same nature I am at present unable to say definitely but I hope shortly to have cleared up this point.

Incidentally it may be mentioned that some animals, for example the guinea-pig, have tooth vestiges to the labial side of the true molars. If the latter belong to the successional dentition as Woodward, Lataste, Magitot and others affirm, and with much I entirely agree, then it follows that the usual definition of a molar as a tooth without a predecessor breaks down in theory.

The third point to which I would direct attention is the developmental history of the complex molar crown from the simple haplodont tooth of the *Reptilia.* In 1895 Professor Osborn delivered an address on "The History of the Cusps of the Human Molar Teeth" before the New York Institute of Stomatology. In that address Professor Osborn sketched the possible course of evolution from a simple cone through the tritubercular type of tooth. Through his many excellent papers on mammalian dentitions he has made the tritubercular theory so well known to all that it is quite unnecessary to restate it.

If this theory be examined critically, however, there seem to me to be unsurmountable difficulties, to some of which I would draw attention. The evidence in favor of this theory is mainly, if not entirely, paleontologic. While admitting the enormous value of such evidence, I do not think the embryologic can be overlooked. The researches of Täcker Röse, Woodward and others, have shown that in marsupials, ungulates, carnivores, rodents, and primates the paracone develops first and not the protocone as should be the case were this theory the true interpretation. Such uniformity in embryologic results cannot afford to be neglected. In some instances the metacone also precedes the protocone in appearing. It has been urged that this is a case of accelerated development. Such a suggestion is difficult to refute, and in the face of the accumulation of embryologic evidence, appears to be quite insufficient. Secondly, the rotation of the cusps necessary to evolve a tritubercular tooth from a triconodont is purely hypothetical, embryology furnishes no evidence of it, and paleontology offers, so far as I am aware, no transitional forms. Again, the absence of the protocone, as I have elsewhere[2] shown is the rule in the *Canidae,* even in such a primitive tooth as dpm^4, and the same is true of other animals. And lastly, there are the multituberculates, contemporaries with the trituberculates. Several other objections have been brought forward, but these alone seem to me to present great obstacles to the acceptance of this theory.

Neither does the multituberculate theory of Forsyth Major afford an adequate explanation for all mammals, though I believe it is applicable to the rodents and possibly to some other classes. The numerically reduced incisors together with the absence of canines and the presence of a diastema seems to place the multituberculates out of court as being the ancestors of animals with a full complement of teeth, such as carnivora and insectivora. Further it is I think generally admitted, that the pattern of the milk teeth is more primitive than that of their successors, and they are usually less tuberculate (Figs. 1 and 2).

The concrescence of cusps representing originally separate teeth has been observed in certain fishes, in *Sphenodon* and in the chamelion but such examples are rare. Were such a theory an adequate explanation we might reasonably expect that many more examples would have been found when the enormous amount of embryologic research in the tooth genesis of mammals is taken into consideration. It is easy to be destructive, much less easy to be constructive. Neither of the above mentioned theories is to my mind satisfactory and I venture to suggest the outlines of another alternative hypothesis, based on the cingulum as a factor in the formation of new cusps (Fig. 3).

That the cingulum is a structure of extreme antiquity there can be no doubt. It is well marked in the anomodont reptiles. It is to be seen in the teeth of many fishes and is very evident in the teeth, specially those of the deciduous dentition, of mammals. Reconstructions of embryonic teeth show that the cingulum is relatively much larger than at a later period. Its function is probably that of affording protection to the gum when the haplodont teeth of the opposing jaws interlock. The effect of such an inter-action might give rise to small anterior and posterior cusps which increasing in size would give rise to the tri-conodont type of tooth such as is found in *Triconodon* and in *Amphilestes* as shown by Goodrich on full exposure of the teeth.

So far this hypothesis accords closely with that of the tritubercular theory. In passing from the reptiles to the mammals a different method of apposition of the jaws comes into play; in the former the jaws bite against one another whereas in the latter the lower jaw closes within the upper arcade. The apices of the lower cones would then fit between a cone of the upper series and the cingulum on its inner aspect causing a depression at that point and at the same time a separation inwards of the cingulum from its cone leading to a broadening of the upper tooth in the transverse diameter. The free edge of the upper internal cingulum would now act in a similar mechanical way on the lower teeth and cause them to broaden out transversely. The mechanical factors would thus operate first on the teeth of the upper jaw and this is in accord with the generally admitted fact that the pattern of the upper molars is the more primitive.

The formation of the smaller secondary cusps is due to the mechanical usage and presents but little difficulty when the problem of the initial stages of the genesis of the molar pattern is once solved.

The importance of the cingulum in cusp formation will I think be acceded by anyone after a careful examination of mammalian teeth generally. Many cusps will be found to be placed directly on it. The small cusps at the lateral margins of the milk incisors of the dog can be seen to be nothing more than the terminations of the internal cingulum which originally surrounded the base of the tooth but has now ceased to exist on the outer aspect, its protective function being

2. "Tooth-Genesis in the Canidæ," Jour. (Zoology) Linnean Soc., London, Vol. xxv, 1596, p. 445.

Fig. 1.—Upper third of the premolar of *Hyæna*. External aspect showing external cingulum and small anterior cusps. (Mus. Zoo. Univ. of Cambridge.)

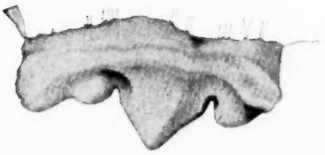

Fig. 3.—Upper fourth molar of *Felis tigris*, with external cingulum and enormously developed anterior and posterior cingulum cusps. (Mus. Zool. Univ. of Cambridge.)

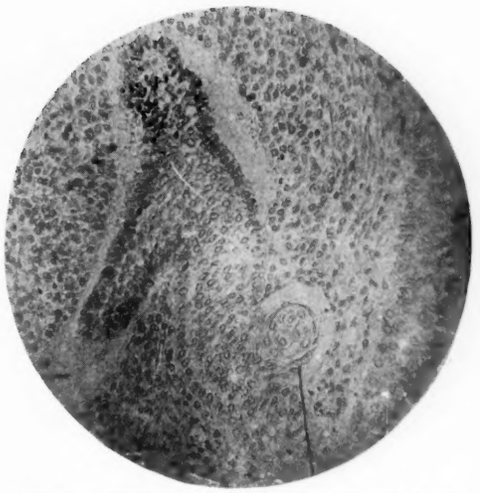

Fig. 7.—Human. Line indicates what may be prelacteal.

Fig. 2.—Upper fourth molar of *Canis familiaris*, with external cingulum and posterior cingulum cusp only. (Mus. Zool. Univ. of Cambridge.)

Fig. 4.—Crown surface of upper first molar of *Cyon rutilans* (Mus. Zool. Univ. of Cambridge.)

Fig. 8.—Human di^2 with labial downgrowth and perhaps prelacteal vestige.

Fig. 5.—Crown surface of molar teeth of rabbit. The larger one shows two teeth fused, ×4. (Mus. Zool. Univ. of Cambridge.)

Fig. 10.—Human *dc*.

Fig. 9.—Higher magnification of portion indicated by line in Fig. 8.

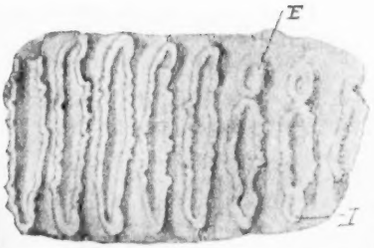

Fig. 6.—Crown surface of molar tooth of *Elephas antiquus* from the Cambridge Gravel. Eight teeth fused. E, external cingulum cusp; I, internal Cingulum cusp. ×½. (Mus. Zool. Univ. of Cambridge.)

Fig. 11.—Highly magnified portion of the part indicated by line in Fig. 10.

no longer required. The cingulum is well marked in most human teeth, especially the bicuspids. For some reason, which I cannot explain, it occasionally happens that the outer portion of the cingulum persists and even gives rise to well marked cusps; such a condition is seen in *Otocyon* and in some of the *Insectivora* (Fig. 4).

The reason why the factors have not operated at the anterior part of the jaw and have allowed the incisors to retain a more primitive type, is to be found in the fact that the greater part of the force exerted by the muscles of mastication acts on the posterior teeth and indicated by the common use of the word "grinders." I take it that any theory put forward to account for the molar pattern should be expected to apply to both tritubercular and multituberculer teeth, and this I think is one great objection to the two hypotheses which go by those names. If the teeth of the multituberculata be examined it will be seen to consist of three transverse rows of cusps, though in some cases there are only two as in *Polymastodon tabensis* and in *Meniscoesus*. If we suppose an anteroposterior fusion of several teeth each consisting of a main central cone with external and internal cingulum cusps, there would result the more complex crown of the *Polymastodontidæ*, and at the same time would explain the great reduction in the total number of individual teeth (Fig. 5). The tendency to the reduction in the external portion of the cingulum in the mammalia is very general, and a similar condition affecting the multituberculate tooth would give the two transverse rows of cusps only as found in *P. tabensis* and *Meniscæsus*.

Space will not permit of a further application of this hypothesis to individual forms, it must suffice to say that from the multituberculate type it is not difficult to derive the pattern of molars found in the *Rodentia* and the *Proboscidea* (Fig. 6). I have been led to formulate this hypothesis from a study of the tooth-genesis in the *Carnivora, Rodentia,* primates and others, in every one of which the tooth arises in the first instance as a single cone with a marked cingulum.

The embryologic evidence of tooth-genesis in the rodents points to a multituberculate ancestry, thus agreeing with the paleontologic conclusions of Forsyth Major. The history, however, of the cusps differs from that of such forms as the carnivores and primates which leads in the direction of seeking for their primitive origin in some forms similar to, if not identical with, the fossil trituberculates (Figs. 7-11).

The inference from these conclusions is that we must look for at least a dual origin for the mammalia in mesozoic times. This may be regarded as an unorthodox conclusion, but I may be permitted to quote the words of the distinguished American paleontologist, Doctor J. L. Wortman, in his remarks at the conclusion of Professor Osborn's address above referred to. Dr. Wortman, in speaking of a polyphyletic origin of the mammalia, says that it is a hypothesis "not wholly unwarranted by the evidence already in our possession."

I fear that I have been able to give but the barest outline of this theory, but I hope that I have said sufficient to make clear the underlying idea, and I shall be amply rewarded if it but leads other workers to inquire into its validity. Any reasonable hypothesis has its value, if it should prove adequate it is so much gained, if the reverse it has cleared some of the mist from our eyes.

CAPITAL OPERATIONS FOR THE CURE OF TINNITUS AURIUM.*

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I collected the material for this paper during my preparations for an excision of the auditory nerve in a case of grave tinnitus aurium, with suicidal tendencies. Several weeks were consumed in work on the cadaver and in designing special instruments. During this time my patient improved so much under enforced hygiene a capital operation no longer appeared justifiable.

Patient.—The patient was a psychopathic, neurasthenic man of 40, in fair physical condition and nutrition.

History.—He smoked to excess and had a questionable specific history. He complained of tinnitus on the left side, of inability to conduct his business, of disappointed ambitions, and of loss of sleep. Beginning in his fourth year, the left ear had continued to discharge until he was 26 years old. Some loss of hearing followed early, but a considerable part of the hearing was later lost suddenly. When he was 28 years old, the tinnitus, "a low-pitched hum in the head" when the right ear was stopped with the finger, was first noted. At the age of 37 he fell from a horse, bruised his head, and broke his leg. The tinnitus then became a high-pitched sizzling in the head or left ear, like the sound of a soda siphon. Previous to his present complaint he was strong and muscular and had great energy and endurance. At the time of examination he was weak and could not sleep or concentrate his mind on anything. He trembled and was exhausted by the effort to restrain himself and appear composed under the intolerable burden of the tinnitus.

He had consulted many specialists and others, including eight well-known practitioners of New York, because the tinnitus kept him awake. He said that at that time air did not enter the Eustachian tube. Though at first the tinnitus was only heard at night, it gradually became constant. He had received every sort of treatment. Some nasal polypi had been removed. Pilocarpin had been given to intoxication without any effect on the tinnitus. Last year a radical operation was performed. No change in the tinnitus resulted.

Examination.—When I first examined the patient he had a completely healed middle ear following the radical operation. The Eustachian tube was closed at the tympanic end with a dermatized cicatrix. No remnants of ossicles or tympanic membrane or other landmarks were visible.

He said that the pitch of the tinnitus would rise about one octave, and become louder before a storm, and then fall again. The tinnitus was in the head, and was loud enough to be heard above a brass band or a full orchestra. When it was imitated, the sound was much like that of a soda siphon, but no louder. The patient said that the pitch of the tinnitus varied gradually.

While he was under examination, he said that the pitch corresponded to F .512, S. V., then F .128, S. V., and again, ten minutes later, F .256, S. V., and again it dropped. In the left ear he heard nothing by air except F .1024, S. V. By bone conduction, all the normal scale could be heard. Bone conduction was equal for both ears when the right or good ear was stopped with the finger. The patient stated that the tinnitus was more annoying in a noisy than in a quiet place. When at its worst, he was forced to stop talking, and perspiration would stream off his face in his effort to endure it and to control his distress and exasperation. He had recently attempted suicide. At the time of the examination he weighed 124 pounds. At the age of 21 his maximum weight was 155 pounds.

Subsequent History.—After taking a vacation in the country for a few weeks, he became more composed and slept fairly well. He said that the tinnitus was perhaps a little less, but that there was no marked change. This improvement has lasted until now, for about one year.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Similar cases are met with now and again. Fortunately the number is not great. They usually end in suicide or insanity. In the psychopathic, a slight tinnitus leads to hallucinations of hearing and finally to insanity. In cases of grave tinnitus, any means of alleviation, no matter how severe or how great the risk, are justifiable. The torture which these people suffer can but be compared to the refinments of cruelty employed by the doges of Venice, when, for example, water was allowed to fall slowly, drop by drop, on the heads of the unfortunate offenders until they were bereft of reason. In a similar manner, the victims of these painless sounds become crazed, and attempt suicide for relief, or finally become demented.

On a few occasions the aid of major surgery has been sought to furnish relief for the unfortunate sufferers whom the intolerable burden of grave tinnitus had driven to desperation. The suggestions in this paper will be valuable if they add anything to the help which the medical profession has been able to give these sufferers in the past.

The work previously done in this field does not indicate clearly the operation to be followed in such cases, nor does it give any encouragement of good results. It does show, however, that it is most necessary to make an accurate diagnosis before operating and that an operation should be resorted to only in those cases in which the grave tinnitus is not clearly of central origin. It also shows that better technic is necessary.

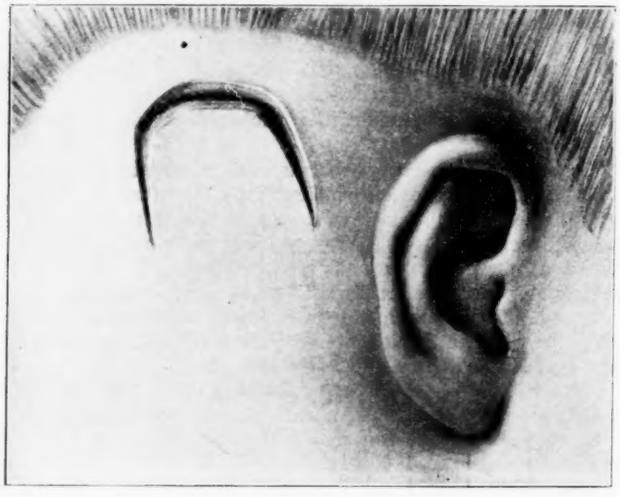

Figure 1.

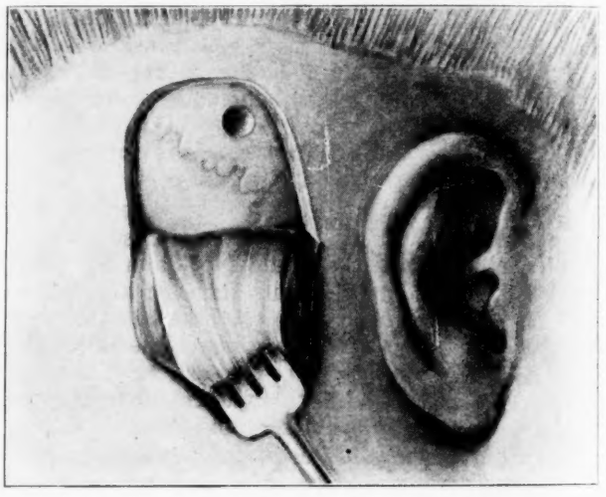

Figure 2.

INDICATIONS FOR OPERATION.

The indications for operating in grave tinnitus are akin to those found in trifacial neuralgia. Experience has here shown that a nerve trunk may be destroyed, cutting off all perceptions of undesirable centripetal impulses. The same must be true of the auditory nerve when the disagreeable sensations are those of sound. With the eighth pair, as well as with the fifth pair of nerves, the best results must be achieved by attacking the intracranial roots of the nerves. Ligature of the carotid is, at best, only a palliative measure. Intralabyrinthine destruction of the auditory nerve has extremely difficult technic and frequently has not been complete. There remains, therefore, nothing but intradural section of this nerve.

On account of the severity of the operation, other means should be tried and found unavailing before this operation is recommended to the patient. Suppuration should also be stopped before this operation is admissible. The source of the tinnitus must be located in or about the labyrinth. A central cause for the tinnitus would remain as effective after as before the operation. The selection of cases of grave tinnitus suitable for operation is very important. Many of the failures in the past can be attributed to mistakes in this particular. To offer any encouragement for operating, the source of the tinnitus must be on the distal side of the point of nerve section. The most promising cases for nerve section show marked loss in air conduction with preservation of bone conduction. Tinnitus, with definite cochlear lesions, low-pitched tinnitus, and tinnitus of varying character and pitch, offer good operating risks.

Tinnitus of high pitch, musical tinnitus or voices and complete deafness in both air and bone conduction offer contraindications for the operation. In a case in which deafness is present by both air and bone conduction, it is probable that the tinnitus originates in some part of the auditory nerve which is still functionating and that this lies more proximally than the cochlea. In cases in which there is good bone conduction hearing with the tinnitus, it is reasonable to suppose that the cause lies peripherally to the cochlea.

Following a method of procedure suggested by my friend, Dr. Carleton Flynt, I performed 65 auditory neurectomies on the cadaver, besides those I did according to the methods described by others.

I acquired considerable efficiency, and by the aid of some instruments specially designed for the purpose I found no difficulty in removing the intra-arachnoid portion of the auditory nerve without any injury to the facial nerve. In most cases I was able to do this without interference with the cerebral veins which are the only possible source of annoying hemorrhage if the technic recommended is carefully followed.

TECHNIC.

Dr. Carleton Flynt suggested the most direct route by which the intradural portion of the auditory nerve may be reached with the least destruction of tissue and compression of the brain, especially of the cerebellum. This route goes through the middle fossa and enters the posterior fossa through the tentorium cerebelli. Inverted "U" skin and periosteal flaps are cut with their anterior limb behind the posterior edge of the mastoid process and extending about an inch and a half upward from the center of the lateral sinus. The posterior limb

extends downward to the lateral sinus about an inch and a half behind the anterior limb (Fig. 1). An osteoplastic flap may be made, but my experience shows that it is usually inexpedient, because of the great thickness of the bone and because of the impossibility of locating absolutely from the outside the position of the lateral sinus. The uncovered bone (Fig. 2) is perforated by my front-bent gouge (Fig. 3), and the opening enlarged with a heavy rongeur and carried well forward as far as the superior angle of the petrous pyramid and downward to the lateral sinus. The dura mater is cut with a "U" flap opening forward; the cerebrum is then carefully lifted with my spatula (Fig. 4) and the anterior surface of the petrous bone is explored for the eminence of

Figure 3.

the superior semicircular canal, which is the landmark for the route to the auditory nerve.

If the cerebral veins are not found lying across the field of operation, my cerebral speculum (Fig. 5) is inserted to hold the cerebrum up off the anterior portion of the tentorium (Fig. 6). If the cerebral veins are in the way, they are first pinched off. With a probe the edge of the petrous bone is located, and with a bistoury a longitudinal cut is made in the tentorium parallel to the edge of the petrous bone, but well behind it, to avoid the superior petrosal sinus.

Veins generally can be distinctly seen running parallel with the edge of the petrous bone and the incision is made posterior to them. The cut is about half an inch long and lies behind the eminence of the superior semicircular canal. With my cerebellar spatula (Fig. 7), the posterior flap of the cerebellar incision is drawn backward. To see if the cut is sufficiently long, the spatula

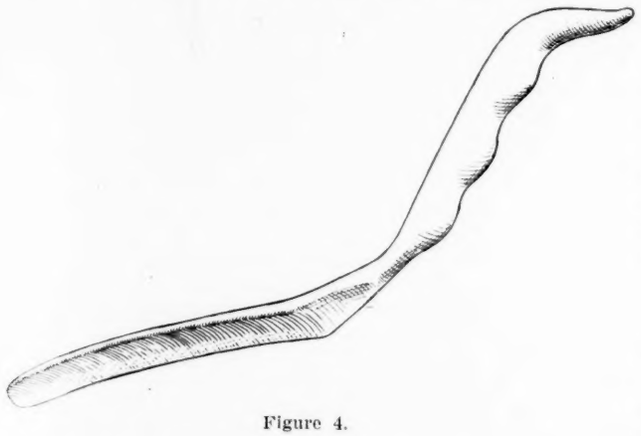

Figure 4.

is inserted from one-half to three-fourths of an inch, and the cerebellum slowly pushed backward to disclose the brilliant white auditory nerve lying at the bottom of the wound directly in line with the eminences of the superior semicircular canal. My cerebellar speculum is then inserted (Fig. 8). The nerve is easily recognized on account of its position and its glistening snow-white appearance (Fig. 9). It lies between 4 and 5 cm. from the anterior edge of the wound and nearer the opening of the wound than the facial nerve, which lies farther inward and anterior to the auditory nerve.

The auditory nerve is grasped by small lock forceps. Care must be taken to avoid pinching the facial nerve. Then the auditory nerve is pulled backward and outward from the internal auditory meatus, and if the proximal part of the nerve is not torn by this time the nerve is pulled outward and forward; the structure of the nerve is so soft and friable that this was found the easiest means of removing it. Next the facial nerve must be inspected, and if any shreds of the auditory nerve are seen lying on it these are to be removed in the same way as the trunk. In this operation very little displacement of the cerebrum is required and scarcely any of the cerebellum.

The chief difficulty of the operation will be due to the venous hemorrhage from the cut in the tentorium, but with care in avoiding the veins which are readily seen on the upper surface the hemorrhage need not be very great. The flow of the cerebrospinal fluid will be considerable and very annoying and will require frequent mopping even in the cadaver. The wound can be kept clean by gauze packing. When the wound is closed, a small drain running from the stump of the auditory nerve through the external angle of the tentorial incision, the anterior inferior end of the dura mater incision and the anterior inferior end of the skin flap should be left. This drain is intended to facilitate the flow of cerebrospinal fluid. The tentorium need not be sutured. Its rigidity and elastic texture bring it back in place. The dura mater,

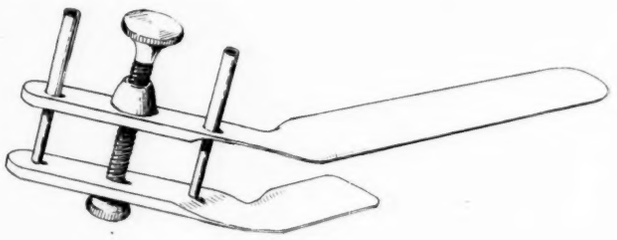

Figure 5.

the periosteum and the skin flap are sutured, leaving only space enough for the drain.

PROGNOSIS.

The prognosis in regard to the cure of the tinnitus in these cases depends largely on the care with which the diagnosis is made before the operation. Of course, the causes of the cerebral tinnitus, if it exists, will not be much affected by the removal of the auditory nerve; but when the cause of the tinnitus can be located in the middle or inner ear or in the peripheral end of the auditory nerve, cure can be expected.

SUMMARY OF REPORTED CASES.

In 1884 J. Orne Green (unpublished) curetted the cochlea for grave tinnitus. Recovery followed the operations, but the tinnitus continued. Linsmayer[1] ligated the carotid. The tinnitus ceased for a short time. Severe cerebral complications resulted. Grunert[2] also ligated the carotid. The tinnitus reappeared in four months. In 1895 Meyerson[3] reported a ligature of the carotid. In four hours the tinnitus returned. Krause of Berlin[4] published, in 1903, the report of a case of section of the auditory nerve done some years previously. There was recovery from the operation and a lessening of the tinnitus. Death resulted from pneumonia. In 1900 Milligan[5] published an account of three cases of

1. Linsmayer. Versuch d. deutsch. Naturforscher u. Aerzte, 1895.
2. Grunert: Archiv. p. Ohrenheilkunde, vol. xxxv.
3. Meyerson: Versuch d. deutsch. Naturforscher u. Aerzte, 1895.
4. Krause (Berlin): "Zür Freilüng der hinteren, Felsenbeinfläche u. d. Kleinhirns," Beitrage z. klinischer chirurgie, v. xxxvii, 1903, p. 734.
5. W. Milligan: Trans. of the Otol. Soc. of the United Kingdom, 1900, p. 50.

chronic catarrhal conditions, with tinnitus. The treatment consisted of the radical mastoid operation and removal of the stapes. In the first case the result was a complete failure; in the second the operation was successful, and in the third case the tinnitus was reduced. Balance[6] published in 1900 an account of the removal of the semicircular canals for suppuration. The tinnitus ceased. In April, 1904, Wallace and Marriage[7] published a description of a section of the auditory nerve. The tinnitus was diminished, but death followed in three weeks. In July, 1904, Lake[8] published an account of the removal of the semicircular canals for vertigo. This operation had no influence on the coincident tinnitus. Shortly after this case he opened a cochlea, with temporary relief of the tinnitus. R. H. Parry[9] reported, in August, 1904, the division of the auditory nerve, resulting in improved tinnitus.

History.—In PARRY'S case, the patient was seized with sudden giddiness six years previously, and similar attacks recurred for two years. Then came a slight improvement. A year before the operation the attacks became more frequent again and very bad. There was severe tinnitus in the left ear and occasionally in the right. The patient had always been partially deaf in the left ear, which discharged until two years before operation. There was no alcoholic or syphilitic history.

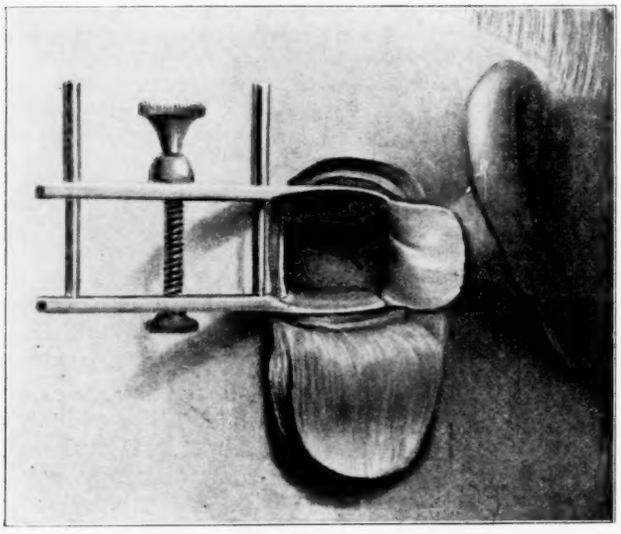

Figure 6.

Operation and Result.—The middle fossa was opened, and an osteoplastic flap extending from the center of the zygoma to the base of the mastoid process was made. The dura was elevated from the petrous bone to the semicircular canal. The tegmen was removed and some of the petrous pyramid. After the puncture of the dura to allow the escape of the cerebrospinal fluid, the soft parts were retracted. There was some

Figure 7.

bleeding. The removal of the roof of the auditory meatus exposed the seventh and eighth nerves. The facial nerve was torn by a spicule of bone. Giddiness and complete facial paralysis resulted, but an early improvement took place. Though lessened, the tinnitus persisted, and also the vertigo. The wound healed by first intention. A month later the dizziness and tinnitus were slightly better on the whole. A year later

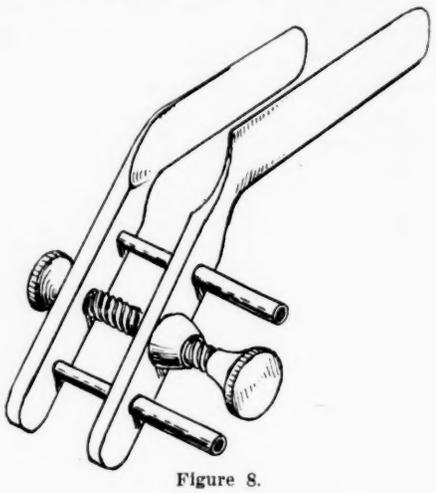

Figure 8.

anastomosis of the facial and spinal accessory was done. As a result the tinnitus was considerably improved, but not the vertigo.

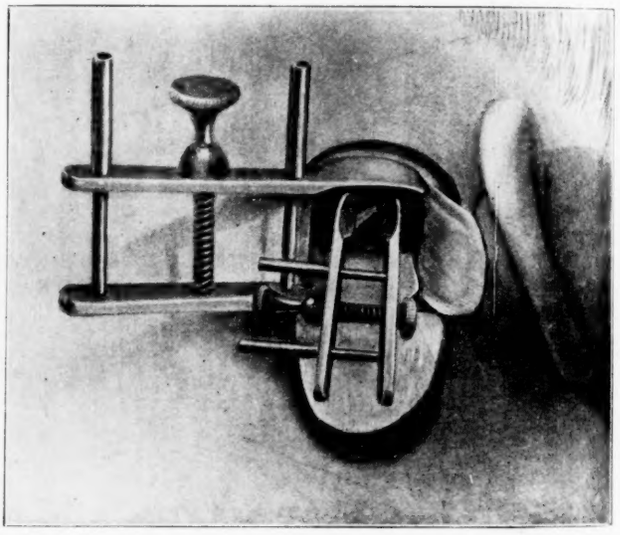

Figure 9.

In KRAUSE'S case,[4] the patient was a woman, 63 years old.

History.—In the right ear she had tinnitus, which prevented her from sleeping and rendered life unbearable. She also suffered from a "sclerotic process of the inner ear."

Operation and Result.—An osteoplastic flap was made of the right occipital region, with the base below. A similar dural flap was also made. The right cerebral hemisphere was displaced to the left with a spatula, and the auditory and facial nerves exposed. The bleeding of the cerebral veins was controlled by the gauge-tampon. The auditory nerve was cut. The operation lasted one hour and a half. On recovering from the anesthetic, the patient could not wink the right eye as well as the left. She said the tinnitus was not so bad as before (remarkable!), but complained of dizziness. She was very drowsy. The next day the tinnitus was noticeably less (!) and there was a slight paresis of the face. On the second day there was still less tinnitus, and the dizziness had entirely gone. The next day the patient was seized with a chill, and there was pneumonic sputa, and five days after the operation died from pneumonia.

WALLACE and MARRIAGE'S Case.[7]—A mastoid operation had been performed on the patient. The middle ear was lined with healthy skin. The patient suffered from dizziness and tinnitus in the ear. The wall of the bony labyrinth was intact. A loud

6. Balance: Trans. of the Otol. Soc. of the United Kingdom, 1900, p. 47.
7. Wallace and Marriage: Lancet, London, April 30, 1905, p. 1192.
8. Richard Lake: "Removal of the Semicircular Canals in a Case of Unilateral Aural Vertigo." Journal of Laryngology, Rhinology, and Otology. London, July, 1904, p. 350; Feb. 1905, p. 74.
9. R. H. Parry: "A Case of Tinnitus and Vertigo Treated by Division of the Auditory Nerve," Jour. of Laryn., Rhin. and Otol., London, August, 1904, XIX, p. 402.

voice could be perceived, but not understood. A loud watch was heard only in contact with the mastoid process. The tuning fork placed on the forehead was heard only on the opposite side. When the fork was placed on the chin it was heard slightly in the affected ear, but sounded quite loud in the other ear. On the mastoid, the tuning fork was only faintly heard. On compression of the left carotid artery the tinnitus ceased. The tinnitus was like the sound of running water, and the sound of ringing bells was always present. It was most noticeable at night, especially when the patient lay on the affected ear. The tinnitus was so severe that sleep was rarely obtained without hypnotics, and was then disturbed and broken. The vertigo was of the type found in Ménière's disease. Drugs had been tried with absolutely no results, and the division of the auditory nerve appeared to be the only possible means of relief for the exhaustion of the patient.

Operation.—The complete mastoid operation was performed. The lateral sinus was exposed and the posterior wall of the meatus removed. The dura mater over the temporal lobe was next exposed, and then that over the cerebellum behind the lateral sinus was laid bare for three-fourths of an inch. A part of the temporal bone extending from the lateral sinus forward and inward to the horizontal semicircular canal was then removed from the groove. This exposed the dura mater in front of the sinus for three-eighths of an inch. A flat retractor, one inch broad and bent at an angle, was inserted and the cerebellum compressed. With the aid of a forehead light, the auditory nerve was readily seen. A blunt hook was passed round the eighth nerve without injuring the facial nerve, and the auditory nerve was then divided by traction or scissors.

The bleeding from the lateral sinus was so great that the wound had to be plugged. Seven days later it was opened and the operation continued. On section of the dura mater much cerebrospinal fluid escaped. The lateral sinus persisting in the way, it was ligated and divided and the cerebellum pressed aside. On account of the flow of blood and of cerebrospinal fluid, a good view of the auditory nerve could not be obtained. Finally it was torn across by a blunt hook.

Result.—The operation appeared to be successful. The wound was closed and a small drain left at the lower edge. The next day there was facial paralysis. The tinnitus had greatly subsided, but was still obvious to the patient. She also had considerable dizziness and headache. The dressings were soaked with cerebrospinal fluid. On the second day, the flaps were bulged by a blood clot, some of which was let out. On the third day, there was some hernia and no attempt at healing. There was slight diplopia, with occasional vomiting. On the thirteenth day, the condition was the same. The diplopia cleared up. The wound was clean, but showed no signs of healing. The discharge of the cerebrospinal fluid continued and the headache was severe. There was no longer any complaint of tinnitus (!). The ocular fundi were normal. Though diminished, the tinnitus had probably remained present and never stopped. The patient died on the twenty-first day.

Autopsy.—No meningitis was found. The cerebrum was healthy throughout and the opposite cerebellar hemisphere was normal. The hemisphere operated on was somewhat soft, but showed no loss of substance. The cortex was blood stained and the vessels full of blood. The cochlea and the semicircular canals were normal. With the exception of a strand as thick as a fine piece of cotton, which lay next the facial nerve, the auditory nerve had been divided. The other organs were normal, save that there were old caseous foci in the lungs. Degeneration of the auditory nerve was found, also of the descending spinal root of the fifth nerve throughout its length in the pons and the medulla, which suggested that the efferent portion of the nerve had been damaged in its extramedullary course. A hemorrhagic softening surrounded a small vessel. This degeneration was confined to the fibers of the pons extending to the middle peduncle. The vestibular nerve was found to be completely degenerated.

DISCUSSION OF REPORTED CASES.

In the case reported by Green and Lake[8] the curetting of the cochlea is not worthy of extended consideration in this connection, because it is very difficult to destroy completely the cochlear nerve within the cochlea.

The accounts of Linsmayer,[1] Grunert[2] and Meyerson[3] show that ligation of the carotid has, at best, only a transitory effect on tinnitus. This method need not be discussed, because it does not directly destroy the perception of the tinnitus and because its effect is only indirect and very uncertain.

Lake's[8] report of the removal of the semicircular canal is irrelevant, because these canals are not supposed to be implicated in tinnitus. Balance's[6] case is excluded from the argument, because it was a case of active suppuration. The good results followed the cure of the suppuration.

The three cases of stapedectomy cited by Milligan[5] are not relevant, since they belong to the class of lesser middle-ear operations.

We now come to the consideration of the three sections of the auditory nerve which have been reported.

The technic followed by Krause[4] required a very extensive wound and extreme displacement of the cerebellum, which was probably sufficient to cause some degeneration. The description of the ear lesion given and of the tinnitus are not sufficient to make it clear where the tinnitus had its probable origin—whether in the middle ear, cochlea, auditory nerve or in the higher centers. After the operation the tinnitus was lessened, which is to be expected after any shock. The subsequent death of the patient indicates that she was probably not in a very observant frame of mind during the five days between the operation and the autopsy. It is worthy of remark that the tinnitus did not stop, nor is there any note of its change in character except that its intensity was diminished.

In the records given by Wallace and Marriage[7] the patient's hearing was very much diminished in the affected ear. Bone, as well as air conduction, was affected. This did not give a very good prognosis of improvement from the operation. The route selected for reaching the auditory nerve was the continuance inward of the common mastoid operation. This is laborious, because of the cracking of the bone, and slow because of the hemorrhage which follows. A clear view of the nerve required an operation in two sittings, disturbance of the lateral sinus and considerable displacement of the delicate cerebellum.

These cases are inconclusive, because in all some fibers of the auditory nerve were left intact. After the operation, the tinnitus was diminished in intensity—a change which follows every severe exhaustion. The fact that death followed the operation so quickly and the finding of the autopsy suggest that there was considerable degeneration and disturbance of the functions of the cerebellum.

In the case recorded by Parry[9] the ear conditions and symptoms of the patient were not sufficiently definite to form a prognosis for the operation. The route through the middle fossa and the petrous bone to the auditory nerve shows the danger of breaking the bone, as well as the danger of the unavoidable compression of the cerebrum. The patient recovered from the operation and was reported as slightly better on the whole. A year later the tinnitus was considerably better. The slow improvement in the tinnitus might suggest that the section of the auditory nerve was not a very positive factor in this change.

The cases cited by Krause, Wallace and Parry, taken together, do not throw much light on the subject. None of these cases shows proper care in locating the source of the tinnitus previous to the operation. In each of the cases, as far as we can learn from the description, the tinnitus might have been central. Moreover, all three

operations are open to the criticism of unnecessary danger from injury to the cerebellum or to the facial nerve. The results of all the operations show that there was probably no direct connection between the irritation of the peripheral end of the auditory nerve and the tinnitus, because whatever improvement was noted came very gradually.

CONCLUSIONS.

The foregoing records justify the following conclusions:

1. Carefully selected cases of tinnitus, with the nerve stimulus located in the peripheral end of the auditory nerve, offer a good prognosis for cessation of the tinnitus after the section of the eighth nerve.

2. A technic which offers little inconvenience from hemorrhage, no danger from bony spicules, and a minimum of evil from compression of the cerebrum, or especially of the cerebellum, gives a good prognosis of recovery from the operation and in selected cases a cessation of the tinnitus.

3. If, after appropriate general and local treatment, grave tinnitus still exists, we are called on to recommend the section of the auditory nerve, provided the source of the tinnitus is believed to lie in the peripheral portion of the auditory nerve.

4. Section of the acoustic nerve will be as effective for the cure of aural vertigo as for peripheral tinnitus.

DISCUSSION.

DR. JOHN F. BARNHILL, Indianapolis, asked if all the patients in whom parts of the auditory nerve were cut died from pneumonia, and if there was an explanation for two-thirds of the patients dying from this cause.

DR. BRYANT said in reply to the first question that one patient died of pneumonia after the operation, one died apparently of hemorrhage of the medulla, and the third was alive one year after the operation. In reply to the second question he said that he thinks it due to injury to the cerebellum, which seemed to be the primary cause.

PHLEBITIS FOLLOWING ABDOMINAL AND PELVIC OPERATIONS.*

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Following any surgical procedure there are many remote disasters occurring with sufficient frequency to keep the thoughtful surgeon on the lookout for these unforeseen complications for days and weeks, or until the patient's convalescence is at an end. The time of the occurrence of such complications varies from a few hours to several weeks after the operation. The change in character, from a postoperative hemorrhage to a phlebitis, begins from the second to the fifth week.

Inflammation of the saphenous or femoral vein following abdominal and pelvic operations, while rare, is met sufficiently often to be of much interest to surgeons engaged in this class of surgery. I have written to a number of the leading operators in this country asking for their personal experience with this condition in their postoperative cases, and I find by the replies that their experience is about the same as my own.

In discussing the causes of this condition one is confronted with the absence of postmortem and pathologic investigations, owing to the fact that very few of these patients die or have the diseased vein removed so that they can be examined by the pathologist. Anatomic peculiarities of the left common external iliac and femoral veins have been suggested as causes of the left side so frequently becoming the seat of a phlebitis. That the left saphenous vein is the vessel most frequently involved is true, but why this vein should be the one most often affected has not been thoroughly settled. Numerous theories have been advanced, but none of them, to me, appears tenable. The left common iliac frequently does not join at the usual place, but passes up on the left side of the aorta and enters the left renal vein. The left common iliac occasionally passes in front of the common iliac artery. In fact, when an anomaly exists in these veins, it is usually on the left side. The passage of the common iliac vein beneath the sigmoid has been mentioned as a causative factor because of the pressure on the returning blood from the left leg by an infected mass of feces in the bowel. A postoperative patient is not permitted to have an impacted sigmoid, as a rule. Malnutrition of the veins, the outcome of a venous stasis, is unquestionably a predisposing cause to a venous thrombosis, and a mild or severe infection at site of this thrombus is all that is necessary to inaugurate a secondary septic phlebitis.

One author (Favor) reports two cases of phlebitis of lower extremities resembling puerperal phlebitis, except that the patients did not have any fever, and thus, he says, the condition was non-infective. He considers such cases as due to the increase of "mineral matter in the blood, especially calcium salts, diminished oxidation, lessened elimination of urea, lessened alkalinity of blood and increased fibrin-forming material in the blood due to the puerperal state." His patients recovered within ten days. Constitutional causes usually act bilaterally, as was the case in these two patients.

The inguinal glands are among the most important glandular centers of the body. They are located in Scarpa's triangle and in close proximity to the superficial epigastric the superficial circumflex iliac, superficial external pudic arteries and their corresponding veins and the junction of the internal saphenous and femoral veins. These glands receive the cutaneous lymphatics of the abdominal walls below the umbilicus. Although these glands are in close proximity to the affected vein, they are very rarely enlarged during the attack.

The majority of the incisions for the removal of intraperitoneal pathology are made in the median line and usually slightly to the left, to avoid the wounding of the urachus. Admitting that an infection in this wound might lead to a phlebitis of left femoral, there yet remains, unexplained, why an incision over the gall bladder or appendix is equally as liable to produce the same complication in left leg.

Gerster, in an admirable article,[1] says: "It is significant that almost all of these mysterious cases of postoperative septicemia occur after 'interval' operations for appendicitis; that is, in those cases in which repeated attacks of a local sepsis have preceded and, presumably, have left behind deposits of an equivocal character." This statement was made in support of his position that in the so-called aseptic operations there exist, at the time of the operation, septic foci. This, I believe, is in part true, and, in the cases in which there existed no foci of infection at the time of the operation, the death of the distal end of tied-off tissues

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905

1. Septic Thrombosis of Portal Vein in Appendicitis, Med. Rec., June 27, 1903.

acted as a nucleus for the development of a mild type of local infection from the bacteria circulating in the blood at the junction of the dead and living structures. Phlebitis of these veins follows operations performed in other parts of the body than the abdomen, as the following case may incidentally illustrate. In the majority of the cases the left saphenous has been the vein involved. I operated on Mr. B. for gangrene of right lung. Two weeks later a phlebitis of left saphenous vein developed. He made a tardy recovery.

That the left femoral and saphenous veins are chosen fields for bacterial colonization no one will doubt, after analyzing the location of the phlebitis in a large series of cases (Fig. 1). I am firmly of the opinion that these germs reach these selected points through the blood, after traversing the heart, lungs and arteries, and thus reach the walls of the veins and that the thrombus, when one forms, is formed as a secondary process. If the walls of the vein received the infection from the venous blood, thrombi would form earlier in the process of the inflammation, and the disease would be of a more serious character insofar as permanent injury to the veins is concerned. Loss of muscular aid in pumping blood toward the heart has been mentioned as a cause, but this would apply equally to both legs.

Keen has suggested that "the passage of the left common iliac vein under the right common iliac artery and under the left internal, might lead to a retardation of the venous blood in left vein and thus act as a cause of venous thrombosis (Fig. 2). When we recognize that the thrombus, when one forms, is usually secondary to the phlebitis in this locality, this theory of pressure on vein loses much of its weight. If the disease of the vein proper is secondary to the thrombus formation, as some authorities claim, there must be some anatomic arrangement favorable to the development of a thrombus in the left femoral and internal saphenous that does not exist in other veins of the body. If this local condition is due alone to a general gouty dyscrasia or to pathogenic germs circulating in the blood, it would be as liable to occur in the right leg as in the left; in both, or in other, veins of the body.

I do not believe that the cause is to be found in the general circulation alone. The walls of the vein are primarily attacked, hence the agent producing the phlebitis must reach the vessel walls either through arteries, lymphatics or, if the venous circulation, there must exist in this left vein a want of resistance to bacterial invasion that is not found in the right leg. Isolated spots of infection of the affected vein are frequently noticed, those farthest away from the body appearing last in most instances. Because of this, multiple thrombi may form in the vessel.

Most of the French clinicians believe that the process is primarily an infection of the venous walls. Maurice Richardson believes that it is especially liable to follow operations in the pelvis of anemic patients and that the disease is aseptic in its origin and in its course. Schenck reports 48 cases occurring in Johns Hopkins Hospital, being about 1.5 per cent. of all abdominal operations. Of this number 40 per cent. were for removal of uterine fibroids and the great majority were seemingly aseptic cases. Noble says: "Many cases of phlebitis can not be explained on the ground of infection. Phlebitis occurs in about 1 per cent. of all cases." Dunning: "Phlebitis occurs more frequently from a suprapubic than from a vaginal hysterectomy." Richardson: "I probably see ten a year. Usually follows operations in deep pelvis, most commonly hysterectomy. After clean operation." Carstens says: "I always consider all such of aseptic origin, although it is funny that you have no sepsis whatever in the wound, or apparently anywhere else." Welch was able in his laboratory to demonstrate the presence of bacteria in over 70 per cent. of these cases following typhoid. He believes that the thrombosis is due to localized infection of the vein's wall. In the rare instances in which the disease begins in the right leg it almost invariably will attack the left also.

It was maintained for a long time that the infection in phlebitis was transported by the white corpuscles to a thrombus already formed. The infection of a femoral vein following an abdominal operation does not appear to be one of extension by continuity from the pelvic structures. A thrombus may form in a vein from compression, as from a tense fascia, or lymphatic glandular pressure, or inflammation of perivenous tissue. In these cases, owing to the inflammatory thickening, it is not always possible to diagnose a thrombus by palpation or otherwise. Weakened heart action in debilitated patients is mentioned as one of the causes of thrombus in vessels farthest removed from the heart (marasmic thrombus of Billroth). Slowness of blood current and collapsibility of veins predispose the vessels to thrombus formation, because the collapsed walls or inflamed walls easily come in contact and a thrombus is thus predisposed, because of the fibrin deposited on one wall adheres to the opposite side and thus the canal of the vessel is occluded.

In reviewing the cases I find that about 30 per cent. followed operations for the removal of the uterus for fibroids. In all hysterectomies (abdominal) many ligatures are used and much tissue is compressed and later becomes necrotic, a septic cavity (uterine) is opened and no drainage is put in. The conditions left in pelvis are favorable for the development of a mild type of infection (local and constitutional) at the site of tied-off tissues. This would naturally occur about ten days or two weeks later. In vaginal operations (rarely followed by a phlebitis) the same structures are constricted, but here there is good drainage and Nature is not compelled to take care of the infected necrotic tissues by absorption.

Keiffer of St. Louis reports a case of left saphenous inflammation following interval appendicitis operation. The patient left the hospital too early and returned to his home, but was found dead in his bed next morning —presumably from cerebral embolism. In one of my cholecystotomies the patient developed a left saphenous phlebitis on the seventh day. On the tenth day following the operation, or three days after phlebitis began, she died suddenly from a cerebral embolism.

Pulmonary embolism follows operations for uterine fibroma more frequently than it follows any other abdominal operation. This is true also of phlebitis of femoral and saphenous veins.

Miller[2] reports 8 cases of phlebitis following abdominal operations which resulted in either a pulmonary embolism or a pleurisy, or sudden death. For instance: Take two patients who are in identically the same general rundown condition. In one Nature is loaded down with the disposition of pedicle tissue, as in an abdominal hysterectomy, and mild infection; in the other, as in a vaginal hysterectomy, drainage relieves the patient of this added responsibility. In pyosalpinx and other suppurative processes in the pelvis an immunity has

2. American Journal Obstetrics, April, 1905.

been established in the patient, so that at the time of the operation she is not likely to become generally septic, many of these operations being followed by drainage.

In most of my cases the first symptoms of this complication have developed in the second or third week following the operation, regardless of the character of the case operated on. If there has been any difference at all, the phlebitis has followed operations for the removal of seemingly aseptic growths, as uterine fibroids, cirrhotic ovaries and interval operations for appendicitis. It would look as though the infection was either introduced through a defective aseptic technic or was due to the absorption of the pedicle at the site of the operation. To the latter theory I am disposed to lean, but this does not explain why the left vein should be most frequently involved, even though the operation was performed on the right side, as is the case in appendicitis, common-duct operations and right oöphorectomy. The usual onset of this condition is marked by a gradually increasing pain along some portion of the long saphenous vein, usually the left and most frequently just below the saphenous opening in the fascia lata. This pain may extend along the whole course of the vein and, as a rule, does follow the vessel below the knee. An elevation of temperature of from 2 to 3 degrees is noticed and a proportionately increased pulse rate is also observed. The pain in limb is increased by moving the limb or by permitting it to remain in a dependent position, and is partially relieved by elevating the leg and thigh. On examining, in many cases, there will be noticed a redness along the course of the inflamed vein or veins. If seen early, no perceptible swelling of the limb will be noticed, but within a few days, if the case is a severe one, the whole limb will be swollen, but more particularly the calf of the leg. This swelling is uniform and free from discolorations or redness, in fact, the surface is blanched. Pressure along the course of the vein elicits tenderness, and in the calf of the leg the tenderness is found all over the posterior surface. The vein is hardened and rolls under the fingers like a tendon in many cases. Pressure, if continued for several minutes, may produce pitting, but not so well marked as in the dropsical affections. Except along the course of the superficial portion of the vein, which may feel unnaturally warm, there is a deathlike temperature of the surface to the examining hand. This condition must not be confounded with a postoperative neuritis of the internal and middle cutaneous or the musculo-cutaneous nerve on outer side of leg and dorsal surface of foot, as illustrated by the following case:

CASE 1.—Mrs. B., aged 36, nullipara; complained of some pain near exit of right great sciatic nerve, at its exit from pelvis. Examination showed a small ovarian cyst. This was removed by abdominal route. Her progress was smooth for the first three weeks; then she developed the following symptoms and condition: a rapidly spreading pain over areas of distribution on internal, middle and musculo-cutaneous nerves, tenderness over limited areas, firm pressure seemingly better borne than a gentle touch. Leg swollen, but not uniformly, does not pit on pressure, as no edema was found. Position does not appear to increase or diminish the swelling. The leg to the touch feels natural in as far as concerns the temperature. Cold air increases the pain. No elevation of temperature or increase in pulse rate. Six months later I examined this woman and found her in perfect health.

CASE 2.—Mrs. Z., aged 33; nullipara. No history of sepsis in pelvis or abdomen. Uterine fibroma. Hysterectomy. Incision in abdomen healed aseptically. On the eleventh day after operation she first complained of pain near the junction of saphenous and femoral veins. This pain soon extended to the

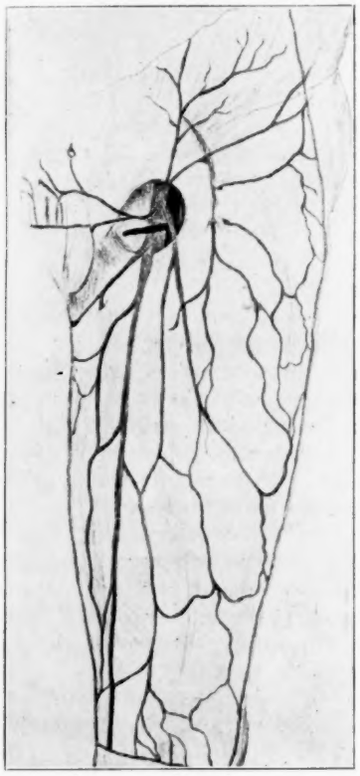

Fig. 1.—The left saphenous at its entrance into the femoral is most frequently the point first affected.

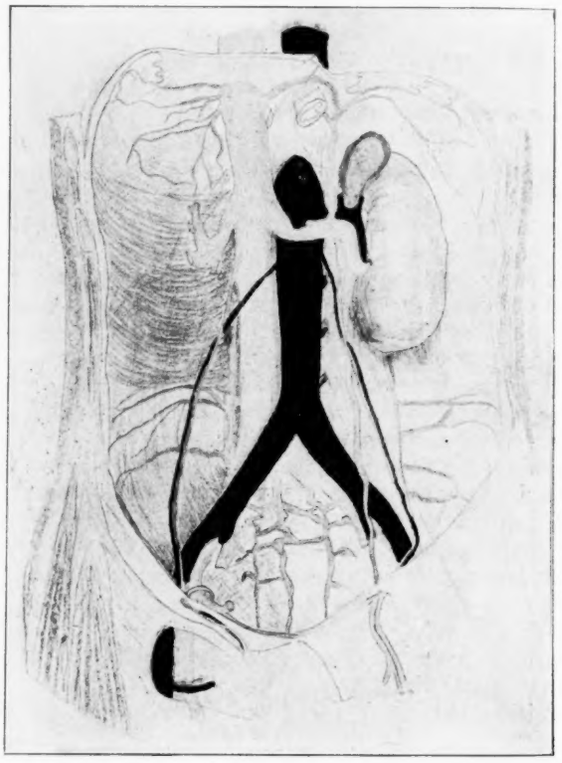

Fig. 2.—Keen says: "The passage of the left common iliac vein under the right common iliac artery might lead to a retardation of blood in vein, and thus favor a left saphenous or femoral thrombosis."

calf of the leg. Tenderness developed along the course of saphenous to inner side of knee, later into calf; redness developed along course of upper portion of the vein. At end of four days a cord-like hardness could be made out along course of the vein. Her appetite was much impaired, tongue coated, pulse 96, temperature 100 to 101. At the end of a week the thigh and the leg were much swollen, with no general redness. Pain and swelling increased by dependence of leg. The acute febrile symptoms subsided at the end of ten days, but left the leg tender and swollen. At the end of three weeks from beginning of phlebitis she left the hospital. The leg continued tender for several months. Two years later I found the left leg one and one-half inches larger than the right. No visible enlargements or tortuosity of veins.

CASE 3.—Mr. E.: chronic appendicitis; interval operation; postoperative left saphenous phlebitis. This young man, aged 21, had suffered from mild recurring attacks of appendicitis for three years. Operation in interval of attacks. Usual postoperative history, fourteenth day, when he noticed a soreness in left leg along course of internal saphenous vein, extending to calf of same leg. Temperature 101, pulse 100. Tenderness along vein, slight swelling of leg. Symptoms subsided at end of two weeks and he left about well, save a slight stiffness about leg and thigh. A year later I found him entirely well.

Fig. 3.—Varicosity of veins of left leg from a descending phlebitis of saphenous vein following an "interval" operation for appendicitis.

Byron Robinson[3] reports a sudden death following the flexing of the thigh on the abdomen in a patient on whom seventeen days previously he had performed a vaginal hysterectomy. The autopsy showed a phlebitis of left ovarian vein, and an occlusion of pulmonary artery with elongated spindle-shaped blood clots.

Dr. Lucy Waite reports a very similar condition following an abortion. The phlebitis in this case was also in left ovarian vein.

Dr. John G. Shelton, Telluride, Colorado, reports a case of phlebitis of left femoral vein following an aseptic appendectomy. Phlebitis began on the thirteenth day after operation. He also reports a case, in the practice of a neighbor physician, of left phlebitis following an interval operation for appendicitis.

3. Med. Rec., June 14, 1905.

Dr. Second had this complication in one of his cases (left femoral) following a clean herniotomy.

Cullen reports that on the twenty-first day following a vaginal hysterectomy one of his cases developed a phlebitis of left femoral vein. The next day she had a severe pain in the right side of the chest and crepitant râles and pleuritic friction sounds were detected. This patient recovered and the tenderness of vein and abnormal chest sounds disappeared. There was evidently an embolus, which found its way from femoral vein into right lung near its pleural surface. Cullen reports other cases in which the femoral and popliteal veins have been affected following operations for cancer of uterus.

Dr. A. L. Brittin, Athens, Ill., reports a case of acute

Fig. 4.—Occlusion of left common iliac vein from an ascending saphenous phlebitis following intravesical manipulation.

fulminating appendicitis, followed by a phlebitis of left saphenous, the latter beginning on the twenty-third day after operation and was accompanied by frequent attacks of dyspnea lasting several minutes. This case recovered.

Dr. W. S. Thayer, Baltimore, in an admirable article on post-typhoidal thrombosis, says that in 39 cases of venous thrombosis, 26 cases occurred in left leg, 9 cases occurred in both legs, 5 cases occurred in right leg, 2 cases occurred in leg not recorded. He concludes his article by the statement: "It seems to me that the evidence is decidedly in favor of the idea that these cases of venous thrombosis are for the most part due to a primary phlebitis.

Heller reports 2 cases of phlebitis following a gonorrhea in a male patient, in both patients the left saphenous was the vein involved.

Dr. Trumbull, Valparaiso, Chili, reports a case of left saphenous phlebitis following a follicular tonsillitis.

Detachment of the thrombi, where such is formed, in these cases, is extremely rare, yet has occurred with a frequency sufficient to warn us in the management of these cases to avoid all known causes leading to pulmonary or cerebral emboli. These thrombi usually are non-suppurative, hence are not likely to undergo deliquescence and become detached from their moorings. A recognition of this fact admonishes us to avoid all mechanical methods that might lead to a forcible detachment of the thrombus, such as massage, too early muscular exertion, etc. Some of the postoperative pneumonias are undoubtedly due to infected emboli carried from inflamed and thrombolic veins. A more fatal condition may be brought about by an embolus in the brain from the same source.

Venous obstruction from a thrombus may lead to gangrene of the limb by an extension of the obstruction in both directions, thus preventing all collateral circulation. A termination so serious is extremely rare. In fact I have been unable to find such a case recorded where the phlebitis followed an abdominal operation. Where the disease extends or involves the internal iliac and obliterates that vessel, as it has been known to do, the anastomotic circulation is carried on through the internal mammary, the superficial epigastric, the external pudic and its corresponding vessel of opposite side. (Fig. 4.) Nature seemingly gets rid of the thrombus in this position by the same process of absorption as is the case with the fibrin extravasated in other tissues.

Massage should not be used in the early history of the disease for fear of dislodging fragments of a thrombus, thus causing embolic, pulmonary or cardiac symptoms of an alarming character or even sudden death. A patient suffering from a phlebitis should avoid all undue or violent exertion, as the detachment of a fragment of a thrombus may result in a fatal embolic injury of a cardiac or respiratory center in the floor of a fourth ventricle or a multiple infection of lung or other remote organs.

An increase of the calcium salts in the blood has been mentioned as a probable source of phlebitis and venous thrombosis, by increasing the coagulability of the blood. Sodium citrate has been recommended as a prophylactic agent by its tendency to decrease the powers of the blood to coagulate. Tavel recommends ligation of saphenous above inflamed portion in order to prevent embolism, a procedure I feel that will rarely, if ever, be necessary.

The acute symptoms of a phlebitis usually disappear within a few weeks under proper management, while the late history is one of a tedious recovery and the use of the elastic stocking extending over a period of months and sometimes years.

Elevation of the affected limb and bandaging it loosely and keeping it moist with witch-hazel or other cooling lotions, constitutes the local treatment for the acute phlebitis. The administration of cathartics and tonics completes the treatment of ordinary cases. Later, massage and the use of an elastic stocking may be necessary.

From various sources I have collected 232 cases. The tables appended show some very interesting facts. Of the 232 cases, phlebitis followed the following operations the number of times stated:

Nephrorrhaphy	9
Appendicitis, mostly so-called aseptic cases	27
Cholecystotomy	4
Oöphorectomy (cystic, cirrhotic, etc.)	16
Hysterectomy fibroids, so-called aseptic cases	69
Vaginal operations, character not stated	8
Alexander's operation	3
Hernia	4
Pyosalpinx	7
Pelvic operations, not specified	9
Abdominal and pelvic, character not stated	56
Ectopic pregnancy	4
Vaginal hysterectomy for cancer	9
Suspension of uterus	7
Splenectomy	1

SPECIAL FEATURES.

In 213 cases, left saphenous or femoral veins were affected.
In 8 cases, both left and right veins were affected.
In 11 cases, right veins alone affected.
In 182 cases, proximal part of vein first affected.
In 36 cases, distal part of vein first affected.
In 14 cases, portion of vein affected not mentioned.
In 166 cases, sepsis was not present at time of the operation.
In 56 cases, no mention of sepsis or asepsis was made.
In 10 cases there was pus present at time of operation. In the great majority of cases, the first symptoms appeared from the tenth to the fifteenth day.
In 6 cases, pleuritic and lung complications.
In 3 cases, sudden death occurred.

DEDUCTIONS:

1. This complication occurs in about 2 per cent. of all abdominal operations.

2. It follows operations on anemic patients most frequently, as in abdominal hysterectomies for bleeding fibroids.

3. Vaginal hysterectomies for the same conditions are rarely followed by this complication.

4. It is more liable to follow so-called aseptic operations where no drainage is used.

5. It is due to a mild type of infection and often to absorption of the necrotic pedicle at site of operation.

6. The disease attacks the left femoral or saphenous veins in over 90 per cent. of the cases.

7. Anatomic peculiarity of veins on left side have not been found that satisfactorily explains why the disease has a predilection for left side.

8. That a *locus minoris resistentiæ* exists in left saphenous and femoral veins is proved by the frequency of the involvement of these veins.

9. The disease is, primarily, an inflammation of the walls of the veins and the thrombus, when one forms, is secondary, as a rule.

10. Many cases of postoperative pneumonias, pleuritis and cerebral emboli have their origin in this source.

11. Treatment consists in elevation of affected leg, tonics, etc.

I wish to return my sincere thanks to the following surgeons, who have aided me very much in the preparation of this paper by sending me the reports of their postoperative cases of phlebitis and otherwise: Drs. Wm. S. Thayer, Maurice Richardson, Benjamin R. Schenck, A. H. Vander Veer, Weller Van Hook, Franklin E. Martin, Byron Robinson, A. J. Ochsner, A. H. Ferguson, W. J. Mayo, W. W. Keen, Wesley Bovée, W. D. Haggard, L. S. McMurtry, J. B. Murphy, Joseph Price, E. E. Montgomery, R. B. Hall, M. B. Ricketts, Edwin Walker, S. E. Lanphear, W. B. Dorsett, L. H. Dunning, H. L. Longyear, C. P. Noble, H. A. Kelly, J. M. Baldy, J. H. Carstens, R. T. Morris and A. C. Bernays.

DISCUSSION.

DR. C. O. THIENHAUS, Milwaukee, Wis., said that several years ago Lennander, from Upsala, published a paper on thrombosis and phlebitis of the lower extremities following operation and stated that this occurrence could be avoided by keeping the patient in the Trendellenburg position for from eight days to two weeks immediately following the operation. For the past four years Dr. Thienhaus has done this in all cases in which there is reason to believe that there might be a tendency to thrombosis of the lower extremities.

DR. A. GOLDSPOHN, Chicago, said that the reason for the greater frequency of this condition on the left side may be

somewhat akin to the reason for the prevalence of varicocele on the left side and the frequent affections of the left ovary in women. Many gynecologists claim that this is due to the fact that the left spermatic vein in man and left ovarian vein in women enter into the splenic vein at a right angle, whereas the right spermatic vein in man and the right ovarian vein in women enter into the vena cava almost directly, so that the venous flow going from the left testicle or left ovary passes around a right angle. This should be thought of in this connection.

DR. A. H. CORDIER said that Dr. Goldspohn's remarks would be applicable were this condition of thrombus of a primary character. This is not the case, it is secondary to the inflammatory conditions in the venous wall. The anatomic character could be easily explained were it of a thrombotic nature, but it is not of thrombotic origin. It is simply a mild type of infection. Inflammatory changes take place in the venous wall and this condition is secondary thereto.

SITE OF ORIGIN OF GALLSTONES.*

L. L. McARTHUR, M.D.
CHICAGO.

If excuse were necessary for again raising the discussion relative to the site of origin of gallstones, it might be found in the evidence offered by the actual specimen I herewith present, as well as by the anomalies its unique clinical history offers. So startling were the findings both at the time of operation and at necropsy that I feel justified in claiming your attention while presenting them for your consideration. I will first give as briefly as possible an abstract of the clinical history, leaving for future publication the more complete details, temperature chart, analysis, etc., and then such conclusions as may be drawn from the review of the current literature.

Patient.—M. G., Austrian, aged 25, clerk, single. Admitted to Michael Reese Hospital Nov. 28, 1904. Died Dec. 12, 1904, fourteen days after admission and on the twenty-third day of illness.

History.—Family history negative. Past history, "Always well and strong." Denies all previous sickness. No venereal history. Drinks some, but not to excess.

Present trouble of ten days' duration. Patient states that he "caught cold" two weeks previous to onset. Onset was sudden, with severe, cramp-like pain in right hypochondriac region. Pain localized and aggravated by deep inspiration and coughing. Tenderness on pressure. No icterus. Had a chill on third day, followed by high temperature. No nausea or vomiting, though an emetic had been given to induce vomiting. Appetite good until recently. Bowels regular. No hemoptysis. No night sweats. No urinary trouble.

Examination.—When patient entered hospital the physical examination showed only a slight tenderness in the epigastric region just below ensiform. Skin chocolate colored. Spleen palpable. Temperature 102.4 (rectal), pulse 92, respiration 20, leucocyte count 10,300; Widal partial. During his first ten days in the hospital his temperature ranged from 99 to 103. On the tenth day he had a chill lasting fifteen minutes, followed by a sudden rise of temperature to 105.6, dropping to 102.6 in an hour after being sponged, pulse ranging all the time from 70 to 90.

Six days after admission to hospital patient had an attack of severe epigastric pain with a slight icteric hue to skin. Small round tumor about the size of an egg was felt in the region of the gall bladder. Rectus muscle tense on right side. No radiation of pain to shoulders, but passes to back and lower thoracic region.

On the twelfth day he had another chill, followed by temperature of 105.6; leucocyte count 19,000, Widal partial. Urinary examination showed albumin, bile, hyaline, granular and epithelial casts.

Operation.—On the following morning, twenty-three days after first symptoms, he was transferred to the surgical department and immediately operated on. Operation under ether anesthesia. Bevan incision revealed a moderately distended gall bladder. No peritonitis. Palpation of common duct in the usual manner revealed a hard cylindrical tube one and three-quarter inches in diameter, which gave the impression of grasping the bodies of the vertebræ, so large and so hard was it. On opening the common duct after the usual packing off, by an inch incision, there escaped innumerable gallstones (246 were counted) of pea size, floating not in bile, but in pus of the same stinking character as characterizes an appendiceal abscess. As fast as the stones could be ladled out with a large gallstone spoon, more would appear, until, considering the desperate condition of the patient, it was deemed advisable to remove only those obstructing the duodenal end of the common duct. Two fingers could be passed along the duct. Large drainage tube inserted in the duct after the gall bladder had been emptied of a semi-translucent mucopurulent fluid and drainage provided. Closure of abdomen in usual manner with gauze supplemental drainage.

We have, then, in this case these remarkable facts: First, the total absence and denial of any former serious illness or infective fever. Second, with innumerable stones in ducts, but none in gall bladder, the patient had never a colic until his final illness. Third, the fluid first escaping from the incision in the common duct instead of bile was stinking colon bacillus pus. Fourth, the absence of stones in the gall bladder, coupled with the denial of ever having had a pain or an ache prior to his last illness, is sufficient evidence that these stones had never been in the gall bladder. Fifth, the postmortem findings demonstrate the existence of innumerable stones in the finer intrahepatic ducts, diminishing in size regularly as the ducts grow smaller.

A partial postmortem examination permitted fourth day after operation revealed:

First. Absence of general peritonitis.

Second. Drainage of gall bladder and common duct in site and efficient.

Third. Dilatation of the common duct excessive, permitting passage of three fingers.

Fourth. Narrowing of cystic duct but not complete occlusion.

Fifth. Many small stones still in common duct.

Sixth. Suppurative cholangitis extending into lesser hepatic ducts.

Seventh. Wherever incision is made into substance of the liver, calculi of varying size are to be seen in ducts.

Eighth. Death from septic cholangitis.

On analysis, gallstones consist of cholesterin alone, bilirubin calcium alone, or varying proportions of both, with cholesterin usually predominating. While bile normally contains minute traces of cholesterin, it never contains, in health, bilirubin calcium. The physiologic chemist, in recent years, has demonstrated that the source of cholesterin is in degenerative process affecting the cell protoplasm, columnar epithelium being that most prone to undergo this metamorphosis, hence the presence of cholesterin in various secretions like those of the bronchi, the nose, in the steatomata of the ear, the bile tracts, or in those neoplasms lined by columnar epithelium.

The biologist has demonstrated experimentally and the pathologist found by his research at necropsies that the influences necessary to induce these degenerative changes are resident in the protoplasmic poisons of somewhat attenuated bacterial organisms. When such irritants act on the epithelia, the latter are found to un-

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

dergo degenerative changes, with swelling of the cells, formation of myeloid bodies within the protoplasm, rupture, discharge of contents, and the subsequent appearance of cholesterin in the débris. Thus, in the lower animals, by attenuated cultures of the colon bacillus introduced in the gall bladder, it has been easy to induce such changes in the epithelium as to greatly increase the cholesterin contents of the bile tracts, with resulting cholesterin-stone formation. Active, unattenuated cultures of the colon bacillus or staphylococcus induce inflammatory changes, with pus formation and precipitated bile salts, but no stone formation, no cholesterin.

Bilirubin, the coloring matter of the bile, a sulphur-containing albuminoid derivative, is soluble in the soda salts of the bile. It is a product of the activities of the liver cell in health, not a degeneration product, which, under certain conditions, may be precipitated with a calcium base, making an insoluble body, bilirubin calcium, the other important constituent of the second

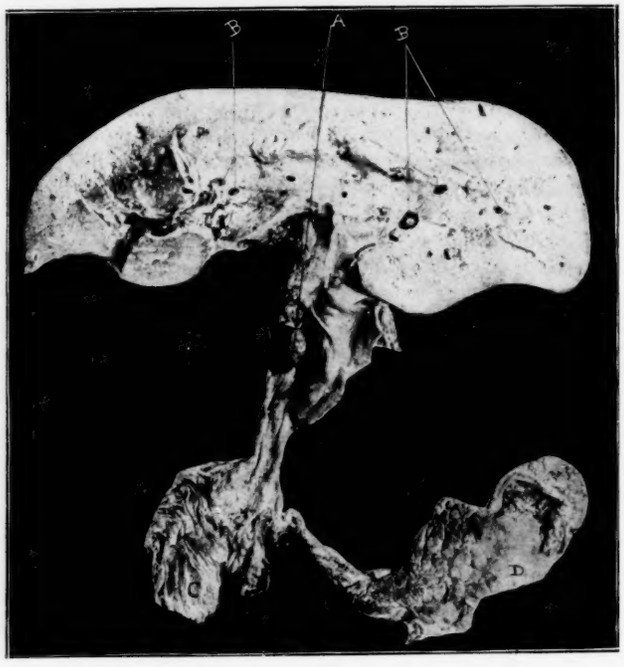

Fig. 1.—Frontal section of left lobe of liver with common duct leading down to duodenum and pancreas. Gall bladder removed. Notice: A, Large stones in common duct. BB, Intrahepatic stones in the different radicals. C, Duodenum. D, Pancreas.

group of gallstones. These conditions, as is the case with cholesterin, are most often those of bacterial fermentative action, though conceivable as occasionally due to a pathologic condition of the hepatic secretions, incident to age, poor metabolism, alkalinity of the bile, and the consequent precipitation of bilirubin calcium. The source of bilirubin, then, being in the hepatic cells themselves, the formation of bilirubin calcium stones is rendered possible in the very smallest bile ducts. This is most frequently the type of those stones found intrahepatically, as of the case submitted. The source of the calcium base with which the bilirubin combines, when precipitated by bacterial or other influences, is as yet a mooted question. Calcium salts exist in the bile normally, but normally do not combine with bilirubin. If, however, bacterial fermentative changes be induced in the bile, with consequent diminished alkalinity, bilirubin calcium is precipitated. Thus, it will be seen bacterial influences are the determining factors of stone formation, whether they be of cholesterin or bilirubin calcium. Of the former in the gall bladder and common ducts more especially; of the latter in the intrahepatic ducts, *probably*; in the gall bladder and common ducts *possibly*.

We have thus seen the source of the gallstone constituents, but have considered only one of the factors essential to stone formation, which, taken alone, will never produce stone. There must be the other factor of stagnation of the bile stream either in the gall bladder and its mucoporous crypts or the ducts. If this be intermittent in character the growth of the stone will also be intermittent, and a laminated stone result. If continuous, the stone presents a more constant composition. It should be distinctly understood that stagnation alone, however produced, will not produce either variety of stone, but that to it must be added a mild bacterial infection, so mild as not to induce inflammatory reaction in the lining of the gall tracts, but sufficient to induce degenerative changes in the epithelial linings, or a diminished alkalinity of the bile by a fermentative change in its constituents, or both. The stagnation in the stream may be inflammatory, neoplastic, or in various ways mechanical, need not be continuous, must not be absolute. Since the flow in the gall bladder is not as active as in the ducts themselves, this is the site of election of the stone formation in many cases, but not, as well-known authorities yet teach, the only place.

The labors of Herter, Miyake, Welch, Hanot, Misczkowski, Chiaro, Gilbert and Cushing have, by an immense number of experiments, demonstrated the truth of the statements so far made, a review of which at this time is inopportune.

Of immense interest, however, is the nature of infective stone-forming elements and their manner of ingress into the bile tracts. This has been now demonstrated to be possible, either through a direct extension up the tracts from the intestines, or by a direct elimination with the bile, of organisms for the time being infecting the blood of the individual. It has long been known as true that the typhoid and other organisms can be recovered in the urine of the infected patient. It now is known that organisms are similarly eliminated by the liver cells, appearing in the bile, to excite, if very virulent, perhaps an acute cholecystitis or cholangitis; if attenuated by their passage through the blood, to slowly induce those changes in the mucosa favorable to the production of cholesterin, and act mechanically as nuclei for stones after having undergone the "clumping" influences which obtain in typhoid serum and secretions. Especial emphasis is here made to the typhoid organism as a factor in the formation of gallstones, first, because it was the earliest demonstrated organism to act thus; second, because 20 to 30 per cent. of all typhoids are followed by gallstones; and, third, because, while not particularly provocative of suppurative processes, it has shown itself to have a wonderful vitality, living in the human as long as 26 years (Billings). Its continued presence in the gall-bladder crypts slowly provokes those degenerative changes before referred to which result in the production of cholesterin.

When, on the other hand, the bacteria of the intestine gain access to the bile tracts by direct extension up the ducts, as can be so beautifully observed in the extension up Steno's duct in typhoid, they usually excite, as they do in the parotid, acute suppurative or gangrenous processes, and we have the presence of acute typhoid gangrenous cholecystitis produced by the same organism

which, more attenuated in character, will produce stone.

What has been said of the typhoid organism occasionally obtains with the colon bacillus, and the nuclei of various stones proven to consist of them.

CONCLUSIONS.

1. All gallstones do not originate in the gall bladder.
2. The origin of cholesterin stones is probably in the gall bladder, with subsequent growths either in gall bladder or ducts where they may lodge.
3. Bilirubin calcium is the constituent of the smaller intrahepatic duct stones.
4. Calculi in immense numbers may have existed for months in the ducts without producing a symptom.
5. The surgeon need not reproach himself too much if there be recurrence of the symptoms after common duct drainage.

DISCUSSION.

DR. C. O. THIENHAUS, Milwaukee, Wis., agreed with Dr. McArthur that gallstones not only form in the gall bladder and in the cystic duct, but in the hepatic and common ducts as well, and that in those cases it is difficult to decide whether to perform a cholecystectomy or a cholecystostomy. Cholecystostomy, he said, is a much more justifiable operation because of the lesser danger connected with it.

DR. M. H. RICHARDSON, Boston, said that one of the most important points in connection with the surgical treatment of gallstones is the impossibility of finding and removing those concealed in the hepatic duct. The surgeon, therefore, should not reproach himself if, after he has removed all that he can find, symptoms pointing to other stones continue. The combinations in biliary diseases are numerous—the complications greatly exceeding those of disease of the appendix. Of gallstone disease we really know but little, and for what knowledge we have we must depend largely on the surgeon's observation of pathologic conditions during life. He has been strongly impressed by the importance of making observations, not only as to the seat of origin of gallstones, but as to symptoms caused by stones the situation and other attributes of which have been thus demonstrated. That gallstones are not always formed in the gall bladder itself two or three of his cases have clearly demonstrated. He illustrated the situation and probable seat of origin of the stones by blackboard sketches. In one case the stones were undoubtedly formed in the liver. In one instance, after the removal of a large number of stones from the dilated hepatic and common ducts, 150 were discharged through the tube; in another, after the removal of many stones from a hepatic duct as large as a gall bladder, each primary division of the hepatic duct was drained separately and the amount of bile from each half of the liver determined. In this case, as the diagram shows, the nidus of gallstones was perhaps the gall bladder, and the dilatation of the hepatic duct may have resulted from obstruction of the common duct by multiple stones. The practical point in connection with the seat of origin of gallstones is that the exploratory incision should be large enough to admit the hand. It is only in this way that the biliary tract can be extensively and thoroughly examined.

DR. ROBERT F. WEIR, Hague, N. Y., suggested another way of getting large incisions other than the one Dr. Richardson showed. The long vertical cut is made, but to achieve the ample room desired for free manipulation and vision of the anterior sheath of the section is divided transversely, the muscle pulled strongly to the left—when its posterior sheath is likewise divided transversely—this gives a large increase of operative space, but if more should be demanded the muscles of the abdominal wall to the right of the ventral invasion can be separated as has been shown by Dr. Richardson. The divided layers of the rectal sheath at the close of the operation are sutured, and this, with the replacement of the muscle, re-establishes the integrity of that portion of the abdominal wall. This procedure is similar to Dr. Weir's method in appendicitis incisions.

DR. L. L. MCARTHUR said that a very large drainage tube was introduced into the common duct in the case referred to, for several days gallstones kept pouring out; in fact, they came so constantly during the operation that the search finally had to stop. Dr. McArthur concluded that no reproach should be made against the surgeon if he has carefully explored the common duct, as the origin of the stones might be far out of reach, even when the surgeon has gone into the liver substance to a great depth. One can not always get all the stones no matter how careful the search.

Clinical Reports

CONGENITAL MALFORMATION OF THE LEFT AURICLE AND OF THE EXTERNAL CUTANEOUS CANAL.*

EMIL AMBERG, M.D.
DETROIT.

Patient.—Mr. A. S., Russian, aged 32, was seen by me Oct. 13, 1905. He comes from Sakolko, in Grodno, Russia, and has been in the United States about six months. He is the father of three children who, according to his statement, are free from any malformation.

Description of Malformation.—The left auricle, as shown by the accompanying illustration, is arrested in its development. The ridge is 4.6 cm. long. The width varies from 11 to 7 mm., the height from 7 to about 5 mm., the lowest portion being

Showing malformation of left auricle.

about the middle of the ridge, which consists mostly of cartilage. Four distinct, blind and narrow canals can be made out by the probe. Two are found in the anterior fold between the cartilage and the skin, the first 11 mm., the second 28 mm. from the top, both pointing upward and backward, the first of them being about 5 and the second about 7 mm. long. A third canal is found in the middle of the ridge about 13 mm. from the top, showing scarcely any depth, and a fourth one in the posterior fold 22.5 mm. from the top presenting practically no depth. Besides these there are slight intimations of two canals in the posterior fold, one 29 and the other 34 mm. from the top, exhibiting only a trace of depth. The osseous canal seems to be filled with fibrous and cartilaginous tissue. The mastoid process is well developed.

Hearing.—Politzer's acoumeter is heard about one inch from the left ear by air conduction, and around the canal by bone conduction. Blake's 512 tuning fork is not heard by air conduction, but by bone conduction. The Weber test is localized in the right ear. Hartmann's 4096 tuning fork is neither heard by air nor by bone conduction. The right ear appears to be normal.

* Demonstrated before the Wayne County (Detroit) Medical Society, 1905.

CASE OF INFECTION WITH THE RAT-TAILED LARVA OF THE DRONE FLY.

E. L. K. HANBY, M.D.
Surgeon to Sloss Sherfield Steel & Iron Co.; Assistant Surgeon to Louisville and Nashville Railway, Alabama Great Southern Railway, Southern Railway, and the Birmingham Railway Light and Power Co.
BESSEMER, ALA.

Dr. Boston, Philadelphia, found on postmortem in a child which died in convulsions and great agony a parasite, which he sent to Professor Stiles of Washington, D. C., who replied that the specimen was a species of the genus *Helophilus* or *Eristalis*. Dr. Boston gives no history or treatment of his case further than that the child died in great agony and convulsions. With the exception of this case I fail to find that any other author mentions this species of parasite. I feel that this disease is very grave and that perhaps it is often met without being recognized. The case which I wish to report came under my personal observation, and the pain and agony was something terrible. I have never seen any human being suffer more than did this child.

History.—On Sept. 12, 1905, I was called to see a little negress 18 months old, at Sloss Mines, Ala. The child was sitting in its mother's lap, crying loudly and pulling out the hair from the front of its head; the eyes were glaring. The child seemed to be terribly frightened; saliva was pouring from its mouth, and it had the appearance of an insane child. The child's mother could do nothing to quiet her. I gave the patient a hypodermic of morphin, 1/16 of a grain, and in ten minutes she was quiet, so I proceeded to examine her further. The mother told me that the child had suffered three weeks previously from teething, so her physician had told her, but he had treated her ever since without any apparent result, and the child had continued to grow worse. She would crawl on her abdomen, and in this position she would stop crying and seem to be easy, and would finally drop off to sleep for a period of half an hour. She would then awake in great pain, and very much frightened and nervous. She cried continually, pulled her hair and scratched her buttocks. These attacks of agony would last from 15 to 30 minutes and then she would be quiet for about one hour, except that she would be very fretful for an hour or two.

The surroundings were very good; the location of the house is 635 feet above sea level. The water is taken from a covered natural spring. The child's diet consisted of fried ham, bacon, eggs, greens, Irish potatoes and cornbread; she also drank a great deal of buttermilk.

Examination.—The child was very anemic and emaciated; the eyeballs were sunken far back in the socket. Temperature was 99.8; pulse 88. The tongue was coated, moist and trembling. The lungs were in good condition except for a slight cough; the heart's action was good. The abdomen was very much distended, and was tense like a drum. The child was having and had had for the past two weeks, frequent passages of mucus, with great tenesmus; moving of bowels did not relieve the pain. The child passed about 32 ounces of urine a day, and on examination I found the specific gravity 1.026; reaction, acid; no sugar nor albumin, but an excess of phosphates. There was no pain on urination.

Treatment.—I prescribed (and with good results:)

℞ Hydrarg. chlor. mitis ..... grs. iii 2|
Santonin ..... grs. iss 1|

Mt. et. ft. chart. No. 3. Sig. 1, powder every 2 hours.

This was followed by a tablespoonful of castor oil and two drops of turpentine.

Result.—Six hours afterward she passed twenty-four live worms, which lived two and one-half days without food. These worms or parasites were grayish in color, one and one-half inches long, from head to tip of tail, and half an inch in diameter. They had two horns, one on each side of the head, sucker-shaped mouths, and were very vicious; they would snap at a straw or at anything held close to the head. The tail of each was one-half inch in length and had a stinger or horn on the end of it. The tail was held straight up when crawling, and the worms could crawl very fast. These worms looked very much like new-born mice, with the exception of the legs, which were very much like those of a thousand-leg worm. After the passage of the worms, the child rested well that night; the next morning her mother showed me the worms. I was utterly astounded and told her that I knew no human being could pass mice, which they resembled very much, so she brought in enough eye witnesses to convince me that she spoke the truth. I gave the child the following:

℞ Hydrarg. chlor. mitis ..... grs. iii 2|
Salol
Santonin, āā ..... grs. iss 3|

M. et. ft. chart No. 3. Sig., 1 powder every hour.

This was followed by one tablespoonful of castor oil. In four hours the child passed four more worms; they were dead. Since that time (Sept. 13, 1905) she has passed no more worms to date (Oct. 27, 1905). And at present is in good health and is gaining in weight rapidly. She sleeps well at night, and is entirely well, in my opinion. As an after treatment, I gave her calomel in broken doses, 1/6 grain once a day for seven days, and followed this with a tonic of iron, strychnin, quinin and cod-liver oil. She is taking this tonic now.

[The parasite in question is the "rat-tailed" larva of the drone fly (*Eristalis tenax*), or of some closely allied form. The drone fly is common about flowers. The larva lives in foul water, feeding on decaying vegetable matter. The tail is a telescopic tube which can be lengthened or shortened as necessity dictates; at its end there is a rosette of hairs which may spread out on the water and keep the larva from sinking; through this tube the larva obtains air when the body is submerged. Some allied larvæ live in rotten wood. This organism is not normally a parasite, but it might be swallowed accidentally. It was described as a parasite of man by Brera in 1809, under the name *Cercosoma* (misquoted by some authors as *Conosoma*). If the larvæ were actually passed from the child in this case, as claimed by the mother, the infection was doubtless purely accidental and probably took place through the drinking of some stagnant water.—Editor.]

OBSTRUCTION OF BOWELS FROM GALL-STONE.

R. H. POWELL, M.D.
Superintendent of the Grafton City Hospital.
GRAFTON, W. VA.

Obstruction of the bowels from gallstone is of infrequent occurrence, being variously estimated from 8 to 15 per cent. of all intestinal obstructions. I may be pardoned, therefore, for reporting a case occurring in the practice of Dr. Ithamar Davisson, of Flemington, a village ten miles from this city, and in which I was called in consultation the night previous to the day of operation.

History.—A woman, aged 56, multipara, rather corpulent, had had stercoraceous vomiting for two days; there had been no movement of the bowels for five days, with severe pain in the epigastric region. Patient gave a history of having had attacks of gallstone colic about eight years previously, but had had no recurrence until the beginning of present illness. When I saw the woman she had a temperature of 100.4 degrees; the pulse rate was 120. Early the next day she was brought to the Grafton City Hospital, where she was immediately prepared for operation.

Operation.—A median incision six inches long was made. The abdominal wall was very thick. The intestines were highly injected and very much distended. I drew out through the incision a few coils of intestine, and then passed my hand down to the right inguinal region, where a hard mass was felt. On withdrawing the mass I found that it was within the lumen of the bowel, about ten inches above the ileocecal valve. Immediately above this point the bowel was distended and highly injected. Near the cecum the intestine was normal in appearance. One assistant was instructed to grasp the bowel on either side of the obstruction. After thoroughly

walling off the abdominal cavity by packing with gauze wet in hot normal salt solution, a longitudinal incision was made directly over the obstruction, which proved to be a gallstone. After thorough cleansing, the opening in the intestine was closed by a continuous Lembert suture, reinforced by a second row. The bowel was cleansed, the omentum drawn down, and the abdomen closed with silkworm gut and chromicized catgut.

Remarks.—The patient made a rapid and complete recovery. The gallstone was egg-shaped and measured one and one-half inches in the longitudinal and one inch in the short diameters.

COMPOUND FRACTURE OF THE VAULT WITH LOSS OF BRAIN SUBSTANCE.

A REPORT OF TWO CASES WITH RECOVERY.

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Surgeon to St. Vincent's Hospital.
LEADVILLE, COLO.

I feel that no apology is necessary in reporting the following cases, as they are of sufficient rarity to merit attention. Cranial injuries, moreover, occupy a place of the first surgical importance, notwithstanding that only 2 or 3 per cent. of all fractures are found to be of the skull; for the reason that the skull contains so vital an organ, and that there is a mortality of from 20 to 25 per cent. in all vault fractures with or without depression.

It behooves us, then, to give our most serious thought to such cases, the treatment of which appears to be not so well comprehended as the treatment of similar injuries to bones in other situations. Why this should be is not easily explained; certainly the brain, so intolerant of violent usage, the one organ above all others that can not be maltreated with impunity, that promptly resents insult, not alone deserves, but demands proper treatment in the event of its injury. If it were not for brain implication in so many of the cranial fractures, these fractures would have no claim to a more prominent position than similar damage to the long bones. As is well known, the serious aspect assumed by these cases results, not from the extent of the fracture itself, but from the probability of brain involvement, which is the more conspicuous by reason of the higher degree of fragmentation of the inner plate than of the outer. This is particularly evident in gunshot wounds, the exploration of which often discloses an unexpected splintered or depressed inner table. The relative infrequency of fracture at a distance in these cases is probably explainable on the ground that the force of the vulnerating object is expended at the point of impact.

In deciding whether or not to explore it is wise to bear in mind the danger of pus formation outside the dura, the easy infectibility of the diploë, and the chance of the inner table being comminuted or depressed, even though there be but slight evidence of injury to the external table. Hence, before making any but the most superficial examination, it is well promptly to shave the head and to scrub the scalp and one's hands as though going into the cranial cavity; then one is prepared, if it should be found necessary, to proceed with whatever measures may be deemed essential without danger of infection, and thus also to avoid dangerous delay fraught, as it often is, with such possibilities for harm.

CASE 1.—I saw this patient, a strong, well-developed man of 40, at midnight on May 18, 1899, about thirty minutes after the accident, which resulted from a quarrel, during which the patient was struck on the head with a woodman's ax. A wound had been inflicted 3⅜ inch long, 1½ inches above the nasion; the anterior angle five-eighths of an inch to the left of the median line; the posterior angle was three-quarters of an inch to the left of the median line.

Treatment.—The head was shaved, scrubbed with chlorinated soda solution, etheral soap and bichlorid of mercury. On exploration there was found the cleanest-cut wound I have ever seen in bone; it had the appearance of a clean-cut incision in any of the soft parts, or as though made by a saw. Within the wound were a few tiny particles of brain tissue. A resolute effort was made to ascertain if splintering, comminution or depression of the inner plate had occurred, including careful probing with a trephine probe, but no evidence of such a condition could be detected. This is the more remarkable, as one familiar with skull fractures, with a knowledge of the inflicting weapon and the probable force used in delivering the blow, would naturally expect to find that considerable more damage had been done the inner plate than had been done the outer. That splintering did not occur is seemingly convincing testimony to the keen edge of the penetrating blade. The wound was sewed up tight, resulting in primary union. While we have no means of ascertaining whether or not harmful adhesions have formed, nevertheless there is at this time (six years following injury), no symptomatic evidence favoring such a theory.

CASE 2.—This patient, a robust man of 28, was seen about two hours after the accident, and presented a small, round wound a half-inch above the right superciliary ridge 1½ inches from the median line. There was a second wound about three inches posterior to the first and a trifle mesially. These injuries were said to be self-inflicted from a 38-caliber gun. The wounds were characteristic of bullet wounds; that of entry, the anterior one, being round and small compared with that of exit, the posterior one, which was larger and lacerated. The area surrounding the anterior wound was powder stained, showing the close proximity of the revolver when discharged.

Treatment.—After cleansing the scalp, during which processs considerable brain tissue escaped, the two openings were connected by a straight incision which was prolonged backward to permit thorough exploration. Considerable comminution and depression was then noted. The opening in the skull was enlarged with DeVilbiss' forceps to permit the elevation and extraction of fragments of bone imbedded in the brain. During this procedure a portion of the bullet was also removed, and more brain tissue unavoidably lost. Profuse diploic oozing from the posterior angle was a disagreeable feature attending the operation. This area was packed, just sufficient room being left in suturing to permit protrusion of the gauze. The wound healed by first intention, except the packed area, which, however, closed without difficulty. At this time (nine months following injury), no untoward symptom appears.

It is to be borne in mind in giving prognosis, however, that epilepsy has been known to develop even many years after skull fracture; and also, that traumatic epilepsy most often follows wounds of the frontal and parietal regions.

To the tyro, the presence of a wound of exit might be taken as positive evidence that the entire bullet had passed out, and be misleading to the extent of his concluding that it probably inflicted slight injury to the skull and its contents. The proximity of the two wounds might also lend color to the belief that the bullet had entered at a slight angle, been deflected by the bone, which it possibly had not injured to any great extent. An immediate exploration will always safeguard against error, and should invariably be performed in doubtful cases of head injury. The experienced surgeon might expect to find irreparable damage to the brain by reason of the revolver having been held at such close range at the time of its discharge. As a rule, gunshot wounds of the skull (except those resulting from small caliber weapons) are hopeless because the explosive effect on bone and fluid—or semifluid-containing cavities, frequently insures extensive fissuring and comminution of the skull and great or excessive contusion of its contents.

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SOME OBJECTIONS TO THE PASTEURIZATION OF MILK.

The question as to whether milk is better food for children in a raw or Pasteurized state is easily answered in a few large cities where supervision of dairies is properly carried out and the standard of dairy cleanliness high. Under such circumstances, there is no question that the raw material is the best in every way. Anyone who will take the trouble to follow the newspaper reports of our large cities will find that in most of them there appear from week to week accounts of the fining of milkmen or dairy companies for putting on the market milk which shows evidence of chemical or bacterial abnormalities or which contains some kind of preservative. A visit to the dairy farms in the neighborhood will usually make it apparent why such evidences of uncleanliness are so commonly found. The average dairyman knows little, and apparently cares less, about the steps necessary to insure clean milk, and the average dairy employe does not appreciate them at all. Practical dairymen invariably claim that the price paid for milk in the large cities is so small, and the expenses of transportation and handling milk so great, that they can not afford to be as clean as is necessary to secure uncontaminated milk. The conduct of a clean modern dairy requires a large outlay for buildings and apparatus, and a much larger force of helpers than is to be found in the average dairy of the present. In order to procure clean milk in our cities, therefore, we must either raise the price of milk or resort to some artificial method of rendering it innocuous. Unfortunately, any increase in the price of milk would fall most heavily on the more prolific poorer classes, and for this reason is objectionable, though it might be possible to educate the general public up to the desirability of this step. Meanwhile, the question of Pasteurization is of importance.

The advocates of Pasteurization laim that the effect of the process is to destroy the ordinary lactic acid bacilli which cause souring of the milk, to kill disease germs, to prolong the keeping power, and at the same time to produce no marked change in the taste or digestive quality. There is still some discussion, we believe, as to the power of ordinary Pasteurization to destroy tubercle bacilli, an important question if Behring's views as to milk transmission are substantiated. There is still a question as to whether Pasteurization does not destroy or inhibit certain natural ferments in milk which assist in its digestion. Many competent observers, perhaps it would be fair to say most of them, believe that Pasteurization does have this effect.

One of the commonest tests applied by health boards to determine the fitness of milk for consumption is the acidity test. The estimation of the number of bacteria is a tedious process requiring special apparatus, and, in a rough way, there is a parallelism between the amount of acid and the number of lactic-acid bacteria. For this reason, the acidity test, which is simple, is in constant use, and a milk not showing definite signs of souring to the unaided senses, is often condemned on account of high acidity. Bergey[1] has recently shown that reliance on the acidity test will lead to grave error if applied to Pasteurized milk. After Pasteurization the bacteria which survive are the spore formers, and most of these belong to the *Bacillus subtilis* group. These organisms can increase to enormous numbers without raising the acidity of the milk very markedly. For instance, in one of Bergey's tests a sample of Pasteurized milk contained over 148,000,000 bacteria, and had not one-half the acidity necessary for its condemnation. It is true that these particular bacilli produce in time coagulation of the milk, but the changes indicative of spoiling which are appreciable by smell and taste, are not apparent, so that before coagulation a milk with a very high bacterial count would be passed if the acidity test alone was used. It is likewise true that the group of bacteria classed under the general head of *Bacillus subtilis* are not generally regarded as pathogenic, but there are instances, especially in eye diseases, in which they have been known to take on pathogenicity. In any event, they produce changes in the milk which render it less digestible, and like other non-pathogenic bacteria their products introduced into the gastrointestinal tract may be fully capable of setting up severe irritation. Dr. Bergey's work is an argument against the use of Pasteurized milk, and one which should be considered.

CANCER COMMUNICABILITY.

One of the interesting phases of the discussions on cancer at the recent annual meeting[2] of the New York State Medical Association was the fact that the majority of the surgeons who took part in the discussion on the etiology and prophylaxis of cancer, insisted on the possibility of the disease being communicated from one person to another. It has long been a perplexing matter to explain why certain houses have seemed to be much more liable to have cancer patients than others, in spite of the fact that the successive families that moved into them bore no relationship to each other. It has been pointed out, too, that cancer seemed to spread along water courses and, having found lodgment in a certain part of a country, to rage there with more virulence than in other parts, though no climatic or dietetic condition-

1. Proc. of the Path. So. of Phila., 1905, vol. viii, p. 102.
2. Medical News, Nov. 4 and 11, 1905.

could be suggested to explain this apparent increase of virulence.

There is no doubt at all in the minds of any surgeon of extensive experience that cancer can be and often is autoinfectious, that is, that it may be communicated from one portion of a cut surface of a patient to another portion of the incision. It has often been noted, moreover, that cancer of the lip has been transferred from one lip to the other, and even more wide distributions have apparently been observed, apart from metastases.

Of course, the question of cancer communicability is extremely important. There are many possibilities of error in the consideration of the subject. Cancer is so common as to make the disturbing factor of coincidences almost impossible of elimination. According to the last census, nearly one in thirty of all those who die in the United States die from cancer. Under these circumstances it is easy to understand that not infrequently a person who has been in close association with a cancer patient will afterward die with the same disease, yet without any necessary causal connection. In fact, if this did not occur, in about one in every fifty cases, or a little more, there would be grave doubt thrown on the census statistics. The persons who wait on cancer patients, apart from nurses, are usually of nearly the same age, that is, are brothers, sisters, husbands or wives, and so they have reached the age where there is a special liability to cancer. While there is no reason therefore, for thinking that we have sufficient evidence to disturb those in attendance on cancer cases with the hideous thought that perhaps they are exposing themselves to some slight additional risks of acquiring the disease, there is every reason for further study of this subject.

General practitioners throughout the country can do more to furnish valuable statistics than the operators in large cities. Every case of cancer development, in which there is or has been intimate association with a previous cancer case, should be reported. More than one country physician knows of series of cancer cases that have occurred along a particular water course, or in successive farms along the same road. All of these cases, even though they may seem to be only coincidences, should be reported. From the data thus obtained, perhaps some definite idea of the amount of communicability of cancer that exists may be estimated. That it is not high is sure; if it exists at all, we should know it, and the sooner the better for humanity. Only the general practitioners can solve the problem in the immediate future. It may seem to some of them that the notion of cancer communication is so improbable as not to deserve attention. It must not be forgotten, however, that scarcely twenty-five years ago, in spite of the fact that tuberculous houses had been pointed out, and tuberculous neighborhoods mapped out, there was a general impression that tuberculosis was not communicable, though we now recognize it as a distinctly contagious disease.

THE TYPHOID SPINE.

Recent histologic and bacteriologic studies of the bone-marrow, not only in typhoid fever, but also in influenza, smallpox and other infectious diseases, have shown this tissue to be so frequently affected that it is remarkable that clinical symptoms on the part of the bones are not more often noted in such affections. That t ey have been noted to some extent can not be denied, but that a general recognition of bone lesions as a result of infectious diseases has not yet taken place can be easily proved by a glance through recent medical literature. The lack of recognition of such lesions is probably due in the main to two reasons, one being that the pains which form so prominent a symptom of such cases are referred to the muscles or nerves, the other that these post-infectious bone lesions tend to heal spontaneously and without the formation of pus.

The lesion which at present usually goes by the name of "typhoid spine," as the diffuseness and uncertainty of this appellation would indicate, has been a subject of a good deal of dispute. There are some who hold that the lesion is a neurosis, whilst others believe it to be due to definite organic changes. As is well known, the condition is one whose main symptoms are pain, generally in the lumbar region, and stiffness of the spinal column. The affection may appear during the fag end of a typhoid attack, or may not occur until several months later. The pain is practically always the initial symptom, it is often quite severe, and usually radiates to the hips, thighs, or abdomen from its seat in the lumbar or dorso-lumbar region.

The recent article of Fluss[1] shows that evidences of more than functional disturbance are to be recognized in quite a large percentage of the cases. Nerve root symptoms are far from rare. Radiating pains, muscle spasm not limited to the spinal muscles, and disturbances in the reflexes must all be interpreted as nerve r t signs. Other evidences of organic change are not wanting, and among these must be mentioned rise of temperature at the onset of the pain, paresthesiæ, and in not a few cases actual bony deformity.

It is difficult to reconcile these various symptoms with a neurosis. Of course, marked symptoms of organic disease are often absent, but it must be remembered that the spine is not an easy structure to investigate. If lesions attack the anterior aspect of the spinal column it is readily understood that they may be difficult of detection. There is in many ways a marked resemblance between the method and time of onset and the course of cases of so-called typhoid spine and the post-typhoid lesions which attack parts of the skeleton which are superficial and easily investigated. Their time of onset is similar, fever is apt to occur at the onset in each case, spontaneous remissions are common in both instances, and suppuration not infrequently fails

1. Centralbl. für die Grenzgeb. der Med. and Chir. 1905, vol. viii, p. 645.

to occur in the definite post-typhoid lesions of the long bones. On the other hand, the mere fact that individuals suffering from these peculiar spinal symptoms are neurasthenic or hysterical does not prove that all their symptoms are due to a neurosis. The evidence so far adduced from the reported cases of typhoid spine is, e think, strongly in favor of the view that this condition is due to organic changes. Just what these changes are we can assume, but can not prove. In the light of our knowledge of post-typhoid bone lesions elsewhere it seems fair to conclude that in some instances we are dealing with a perispondylitis, and in others with actual disease of the vertebræ. It is certainly safe and conservative to regard all such cases for the present as organic in origin, and to outline the treatment with this point in view.

MENTAL DISEASES ASSOCIATED WITH ARTERIOSCLEROSIS.

The hyperplastic degenerative process designated arteriosclerosis may be looked on as the anatomic expression of old age, mature or premature. Secondary to it the nutrition of the tissues generally suffers with atrophy of parenchymatous structures and increased production of interstitial tissue. These alterations naturally are attended with varied functional disturbances, taking for example, in the sphere of the nervous system, the form of impaired mental, motor and sensory activity. Changes of a related character may be due, likewise, to atrophy of nerve cells, perhaps from toxic influences, although here, too, the vessels are not likely altogether to escape. A good deal of attention has been given to this subject in recent years, and an interesting exposition of the relations between sclerosis of the cerebral vessels and various forms of mental disease is given by Dr. Albert M. Barrett,[1] supplemented by a detailed account of illustrative cases, with description of the lesions.

The lesions are usually focal, although they may be diffuse, and they give rise to a more or less distinctive symptom-complex of varying character. Miliary aneurism, with or without rupture, thrombosis and embolism, conditions often associated with arteriosclerosis, for the purposes of the present discussion, are left out of consideration.

The disease of the vessels may give rise to cerebral atrophy, to subcortical encephalitis, to perivascular gliosis or to degeneration of cortical vessels with destruction of nerve-tissue. The clinical manifestations referable especially to the brain include diminished mental endurance, impaired mental power, enfeebled memory, headache, vertigo, aphasia, syncopal, apoplectiform or epileptiform attacks, paresis and dementia.

The disorder is to be differentiated especially from paretic dementia and from simple senile dementia. The presence of vascular disease, a history of similar disease, perhaps associated with mental disturbance, in the ancestry, and freedom from syphilitic infection are in favor of the arteriosclerotic affection. In the latter, symptoms referable to vascular change, such as attacks of vertigo or "shocks," usually appear earlier than mental phenomena, while delusions are more common and more pronounced in paretic dementia. The pupillary reactions and the kneejerks are less commonly enfeebled in arteriosclerotic than in paretic dementia. The lesions and, therefore, the symptoms, of paretic dementia are diffuse, while those of arteriosclerotic dementia are usually focal.

The differentiation of senile dementia is exceedingly difficult, as this condition is almost invariably, though not necessarily, associated with the lesions of arteriosclerosis. The symptoms comprise gradually increasing change of character, with forgetfulness, inclination to fabulate, loss of judgment and disorientation.

1. Amer. Jour. of Insanity, vol. lxxii, No. 1, p. 37.

OREGON AND ORGANIZATION.

Not one physician who is interested in the general welfare of his profession can afford to miss reading the report on professional conditions in Oregon which is presented in this issue[1] by the chairman of the Committee on Organization. It is pertinent to call attention to one of the great benefits of Dr. McCormack's visitations to the various states, and that is the comparative estimate of medical affairs which results from the personal investigation of them all by one experienced eye. In no other way is it possible so readily to obtain a true picture of the situation. Then each state presents certain commendable features that all the rest should know about in order to imitate if possible. Also in nearly every state ill conditions have arisen which others will wish to avoid by knowing the antecedent causes. So in the present report on Oregon we find record of one county society that is a model for all, but a general state of professional disintegration whose etiology others will study in order to avoid. Because of internal factional disputes within the profession of the chief city there is total paralysis of effort to perform public duty and to improve medical conditions. The evil results of dissension among otherwise capable and honorable men are vividly portrayed. The medical practice act is ineffective and unenforced, and in consequence of the low qualification standard the profession is being recruited from those who fail to pass the examinations of other states. Good men, disliking personal strife, stay out of the organization and thus greatly weaken it. As a whole, there is no real organization, the average of the profession is low, and the medical schools are weak. Quacks flourish, and here and there is evidence of commissions and of contract and lodge practice. The picture could not well be more unattractive, but no doubt exposure of the evil state of affairs will stimulate the capable men to enter the organization and to control it for the good of the public and of the profession, putting de or absorbing those who have heretofore spent their time in internal dissension. The regeneration should be made easy by reason of the fact that in the state

1. See page 1818.

there is one model county society whose example and success are bound to win adherents for real organization. There is not a state in the Union here the lessons of Oregon can not be studied with profit. Everywhere the lessons of this diagnosis of professional conditions should be fixed firmly in our minds, the good to be imitated and the evil to be avoided.

PURE FOOD BILL.

One of the most important bills before the United States Congress this year, from the standpoint of public health, is the Pure Food Bill. This bill has already been introduced, according to press reports, but whether it is the same measure as was before Congress last year we do not know. It is encouraging to know that President Roosevelt has recommended such legislation in his message to Congress, which is an advantage. He says:

> I recommend that a law be enacted to regulate interstate commerce in misbranded and adulterated foods, drinks, and drugs. Such law would protect legitimate manufacture and commerce and would tend to secure the health and welfare of the consuming public. Traffic in food stuffs which have been debased or adulterated so as to injure health or to deceive purchasers should be forbidden.

It is to be hoped that every physician will realize the importance of the measure and will do all he can to overcome the opposition that will come from the organized interests that will be affected. At the present time we would suggest that it might be a good plan for each one to write to his congressman and senator and ask for a copy of the bill. It will at least make them realize that there is such a bill and that some of their constituents are interested in it. There will be no open opposition to the measure; it is the other kind that may be expected.

WHAT IS "THE PACE THAT KILLS"?

This question has been correctly answered a good many times, so that its revival would seem superfluous were it not for the fact that the terms of the problem are continually forgotten. Recent statistics in our two largest and most "strenuous" cities have appeared to show that the mortality from diseases of the nervous system is not increasing. Still, it is much the fashion to charge premature and unanticipated deaths to "the strenuous life" and to "the hurried life." Newspapers, and even some medical men, read into these unfortunate mischances a meaning that rather appeals to our national pride. We are gravely told that the hurry and strain of American commercial life are reaping a harvest of premature decay and death. Of course, if this deduction is warranted by the facts, the "captains of industry," great and small, must be the chief sufferers. But, as a matter of common observation, the real leaders in the great business transactions of our period, as a rule, work no longer than from 10 a. m. to 3 or 4 p. m. on five days of the week. These men also take more outdoor exercise and recreation than ever before was the case. Among them, too, long vacations are the rule. Premising that there is lack of reliable statistics on the subject, it may well be doubted if the fashionable and rather flattering conclusions are in any respect correct. It is not business that kills, but intemperate living of every kind. It is the excessive play of the emotions and the unrestrained gratification of the appetites, not the hard work and the rush, that chiefly contribute to the premature fatalities. The true answer, then, is but a modernized variant of the ancient "wine, women and song." The times have changed, ways of life are different, but now, as heretofore, hard work is beneficial to health, and, as always, there is the penalty for excess in the pleasures of life. The trained physician who witnesses these untimely deaths is not deceived. The myocarditis, the arteriosclerosis, the nephritis, the pneumonia tell to the practiced eye the same tale that is so obvious when we are confronted with an ataxia, a multiple neuritis, a general paresis. Such being the case, it is disingenuous, to say the least, to delude the public into a belief that mere hurry and activity produce such results. Duty and responsibility demand that we at all times keep the old truths well to the front. The true moral must ever be drawn from the execution of these penalties, that the world may benefit by their deterrent effect.

TEA DRINKING.

Considerable has been said of late in some English publications, and extensively quoted in this country, about the evil effects of tea drinking in causing physical degeneracy. We have always with us some dietetic reformers who put the ban on tea as well as on the more harmful stimulants. THE JOURNAL has already expressed itself on this subject, but in view of the above facts a word more may not be amiss. There is a possibility that the decoction of tea leaves improperly made may be injurious to certain organizations, but that a mild tea infusion of sufficient strength to give all its needed exhilarating effects is harmful we can not believe, and certainly not if it is used in due moderation. Excessive tea drinking, like excessive bread eating, is not to be commended; excess in anything is necessarily injurious. There may also be certain conditions of the system, generally morbid ones, in which the taking in of any considerable amount of the chemical substances contained in tea is harmful, but such are not the conditions of the average individual. As counter to this we may mention the sanitary advantages of the germicidal effect of boiling the drink, which wards off more sickness than it could by any possibility produce. It is this which makes habitable the germ-saturated soil of China, and the degenerating effects on the very virile but exclusively tea-drinking population are not very manifest. There are few, if any, more innocent and attractive flavorings possible for hot drinks than that of the tea leaf. Reformers also should bear in mind the fact that in condemning such innocent drinks as tea they are furnishing, in a way, ammunition for the advocates of less innocent ones, who are always ready to utilize any side arguments that are afforded them. Tea, like many other useful things, may not be a valuable element in an infant's diet, and is liable, like every other good thing, to be abused, but it has few objectionable qualities and may be counted as one of the things adding to the material happiness of life.

Medical News

ALABAMA.

Damage by Fire.—The offices of Drs. Thomas F. Robinson, Lucian A. Spencer and Hanby, Bessemer, were badly damaged by fire November 17.

Emergency Hospital Opened.—The Montgomery Emergency Hospital, which is said to be one of the finest and best equipped institutions in the South, has been opened to receive six negroes suffering from smallpox.

Personal.—Dr. T. Miles Leatherwood and family have returned to Tuscaloosa from an extended stay in Denver.——Dr. and Mrs. Rhett Good, Mobile, have returned from Detroit.——Dr. Gaston J. Griel has been elected city physician of Montgomery.——Dr. William G. Harrison and daughter, Talladega, have returned from Europe.

ARKANSAS.

Hospital Threatened by Fire.—The State Lunatic Asylum, Little Rock, was in danger November 25 from fire which broke out in the laundry of the institution.

Fifth District Meeting.—The Fifth Councilor District Medical Society met in Camden November 9, and after a literary program was entertained by the physicians of the city at a banquet.

Hot Springs Doctors Convicted.—A jury in the Federal Court November 1 decided that Dr. S. C. Van Leer, Hot Springs, had been guilty of violating the regulations governing the Hot Springs Reservation by prescribing hot-water baths without having registered. Sentence was deferred.——Drs. James S., Fred and George Fulton, Hot Springs, were arraigned November 8 on the charge of violating the act of Congress governing the prescription of hot-water baths by non-registered physicians. After hearing the evidence Dr. James S. Fulton was fined and his two sons $5 each.

Suit and Injunction.—By order of the Mena Board of Health the public schools of the city were ordered closed until November 20 on account of diphtheria, and on November 16 the board issued an order that all public meetings such as schools, churches and operas should be prohibited for the time being. The pastor of the Lutheran private school, despite this order, opened his school, and was arrested and fined for disobeying the order of the board, whereupon the pastor brought an injunction suit against the board, which was decided by restraining the board from interfering with the school in any way.

Government Should Control Springs.—Dr. Martin Eisele superintendent of the Hot Springs Reservation, in his annual report, states:

> The present system of operating the baths through the medium of private lessees is in conflict with public opinion and incompatible with local conditions, and that the government should, as soon as practicable, consistent with existing conditions, assume absolute and complete control of this reservation and operate the bathing interests under government supervision and control thereby eliminating the spirit of commercialism which is manifested under present conditions; and, through scientific equipment, perfection of system, order, discipline and intelligent direction, extend the benefits to be derived from the healing waters, with rates adjusted to cover prudent operating expenses and necessary improvements.

He also makes the following recommendations:

> I have the honor respectfully to recommend that a white man and white woman of special educational skill in the administration of the baths, be employed to operate the male and female departments of the various bathhouses as special bath directors, who shall supervise and direct the proper execution of bathing directions when furnished by physicians to their patients, or when the applicant is without medical direction.
>
> Under present conditions, there is no one to whom the patient can appeal concerning the baths, except the bath attendant. Especially is this true in the female department, as a manager can not invade the privacy of this department, and if he did he has no special qualifications to properly direct the various forms of the baths required under competent medical direction. In view of the importance and growing demand for more intelligent administration of the baths, I respectfully urge that this recommendation be given careful consideration.

CALIFORNIA.

Diphtheria.—The Gardner school, San José, has been closed for fumigation on account of the prevalence of diphtheria.

Personal.—Dr. John Crawford, Arroyo Grande, has been appointed pension examiner, vice Dr. George B. Nichols, San Luis Obispo, deceased.——Dr. Frederick W. Hatch, Sacramento, has been reappointed superintendent of state hospitals.——Dr. D. C. Strong, Redlands, has been appointed superintendent of the San Bernardino County Hospital, succeeding Dr. Theodore D. Kellogg, Chino, removed.——Dr. John S. Hogshead, Laytonville, has been appointed medical superintendent of the Mendocino county farm.——Dr. William C. Hopper, San Francisco, has returned after two years in Nome, Alaska.——Dr. A. N. Loper, Fresno, has been elected chairman of the local board of health to succeed Dr. George L. Long, resigned.——Dr. Isaac A. McCarty, Corona, has resigned as physician of Riverside County, to take effect Jan. 1, 1906.——Dr. Norman Bridge, Los Angeles, has assumed medical direction of the Esperanza Sanatorium, Altadena.

COLORADO.

Create Medical Library.—The Las Animas County Medical Society has decided to found a medical library in Trinidad for the use of the physicians in southern Colorado.

October Deaths.—The total number of deaths in the state during October was 782, equivalent to an annual death rate of 15.69 per 1,000. Typhoid fever caused 48 deaths; diphtheria, 7, and scarlet fever, 5.

Presentation.—On the sixtieth birthday of Dr. S. Edwin Solly, Colorado Springs, his professional associates presented him with a silver loving cup handsomely engraved and inscribed to "The Youngest of Us All."

Dissolution of Hospital Staff.—The general staff of physicians at St. Francis Hospital, Colorado Springs, has been dissolved in purusance of a change of policy in the conduct of the institution whereby all physicians in the city will have the same standing at the hospital.

Communicable Diseases.—During October 369 cases of typhoid fever, 94 of scarlet fever, 63 of diphtheria and 9 of smallpox were reported. Compared with September, this shows a decrease of 5 cases of smallpox and an increase of 40 of diphtheria, 65 of scarlet fever and 35 of typhoid fever.

Personal.—Dr. Ortus B. Adams has been appointed mine surgeon for the Colorado Fuel & Iron Company at Tercio.——Dr. S. B. Schloz, Bessemer, has resigned from the dispensary staff of the Colorado Fuel & Iron Company and will locate in Colorado Springs.——Dr. Matt R. Root, Denver, surgeon general of Colorado, has gone to New York.——Dr. John Elsner, Denver, has returned from a vacation trip in the East.——Dr. and Mrs. A. Mansfield Holmes, Denver, have returned from a trip to Ohio.

CONNECTICUT.

Communicable Diseases.—During October 157 cases of measles were reported in 13 towns; 114 cases of scarlet fever in 32 towns; 5 cases of cerebrospinal fever in 4 towns; 120 cases of diphtheria in 29 towns; 8 cases of whooping cough in 5 towns; 175 cases of typhoid fever in 46 towns, and 35 cases of consumption in 16 towns.

October Deaths.—During the month of October 1,166 deaths were reported to the State Board of Health. This was 30 less than for the previous month, 1 less than for October, 1904, and 28 more than the average for October in the five years preceding. This mortality is equivalent to an annual death rate of 14.1 per 1,000. Diseases of the nervous system caused 154 deaths; heart disease, 128; consumption, 101; accidents and violence, 83; diarrheal disease, 82, and pneumonia, 74.

Personal.—Dr. Charles H. Glover, Norwalk, has been appointed a member of the medical staff of the Connecticut Hospital for the Insane, Hartford.——Prof. H. W. Conn of Wesleyan University, Middletown, has been appointed state bacteriologist.——Dr. Charles A. Lindsley, New Haven, has resigned as secretary of the State Board of Health, to take effect after the removal of the office of the board to Hartford.——Dr. Joseph A. Coogan has been reappointed health officer of Windsor Locks.——Dr. Herman P. Hessler, New Haven, sailed for Europe on the *Blucher* November 7.

DISTRICT OF COLUMBIA.

Distinguished Surgeons Visit Washington.—Dr. Adolf Henle, professor of surgery in the University of Breslau, Germany, and his assistant, Dr. Otto Fittig, after a visit in Washington, sailed for Germany November 21 on the *Kronprinz Wilhelm*.

Personal.—Dr. George Tully Vaughan, assistant surgeon general United States Public Health and Marine-Hospital Service, Washington, has resigned in order to devote his entire time to the practice of surgery.——Dr. Louis Mackall, Georgetown, slipped and fell November 15, fracturing one of the bones of the foot.——Dr. James J. Kilroy, Washington, has resigned his position on the staff of the gun factory in the Navy Yard to devote his time to the practice of medicine.

Deaths of the Year.—The District Health Officer in his annual report gives the total number of deaths in the District for the year as 6,221, of whom 3,580 were white and 2,641 negroes.

The mortality was equivalent to an annual rate of 19.61 per 1,000 for the entire population, or of 16.03 for white and 27.92 for negroes. The chief cause of death was consumption, which claimed 832 victims, or 13.37 per cent. of all deaths. Diarrhea of young children caused 323 deaths; heart diseases, 562; paralysis, 62, and pneumonia, 556.

FLORIDA.

Loss by Fire.—The building in Mayo owned by Dr. Robert L. Goodbred was destroyed by fire September 18 at a loss of $1,500, fully covered by insurance.

Personal.—Dr. John B. Maloney, Key West, has been appointed first lieutenant and assistant surgeon, Florida State Troops, and assigned to duty with the Second Infantry.——Dr. J. Whiting Hargis, Pensacola, who has been seriously ill with septicemia, has recovered.

GEORGIA.

New Sanatorium.—The Cordele Sanatorium will be opened about January 1 by Drs. Thomas J. McArthur and Walter E. Edwards, Cordele.

New Hospital.—The trustees of the Presbyterian Hospital, Atlanta, have recommended that the hospital association build a steel fireproof hospital to cost $50,000.

Personal.—Dr. Fred Low, Augusta, was presented with a handsome pair of cuff buttons by the executive force of the City Hospital on the occasion of his departure for New Mexico. ——Dr. Theodore E. Oertel, Augusta, was elected permanent chairman, and Dr. M. A. Clark, permanent secretary, of the tuberculosis committee appointed by the Georgia Medical Association.——Dr. DeSaussure Ford, Augusta, resigned from the chairmanship of the governing board of the City Hospital. Augusta, November 1, and Dr. W. Harry Goodrich was elected his successor.——Dr. Noel M. Moore has been appointed a member of the board vice Dr. William H. Doughty, term expired.

ILLINOIS.

Epidemic Diseases.—Diphtheria is reported to be epidemic in Walker Township, Hancock County, where three schools have been closed.——An epidemic of smallpox is reported from Jerseyville, where 12 cases have been discovered among the employés of a shoe factory. A strict quarantine has been established and the State Board of Health is in control of the situation.

To Investigate Water Supply.—At a conference November 21, attended by the secretary of the State Board of Health, Edward Bardow, director of the state water supply, and J. A. Harmon, sanitary engineer, plans were adopted for the systematic investigation of the water supply of the state. This investigation will include the sewage purification system in operation in 20 cities of the state, and reports from other states and from foreign countries.

Personal.—Dr. Samuel A. Graham has been reappointed chief of the staff of physicians at the Illinois Eastern Hospital for the Insane, Kankakee.——Dr. James L. Lowrie, Lincoln, narrowly escaped death in a collision between his buggy and some freight cars which were making a flying switch. His buggy was struck by the cars, and the horse, buggy and man were dragged or pushed along the track for 60 feet in front of the cars. Fortunately Dr. Lowrie escaped with only a few scratches and contusions.

Chicago.

Personal.—Dr. Daniel H. Williams delivered a series of lectures at Meharry Medical College, Nashville, beginning November 6.

The Smells of Chicago.—The Health Department, after an investigation of the various foul smells which infest the city, has found seven centers of pollution: The stock yards, stables, sewage, tanneries, malt-drying plants, unclean freight yards, and rendering plants.

November Mortality.—During November 2,065 deaths occurred, equivalent to an annual mortality of 12.56 per 1,000. Pneumonia caused 301 deaths; consumption, 249; nephritis, 187; violence, including suicide, 147; acute intestinal diseases, 112, and cancer, 106.

Deaths of the Week.—There were reported to the Department of Health for the week ended December 2, 483 deaths, equivalent to an annual mortality of 12.65 per 1,000. The deaths were 12 more than for the previous week and 33 more than for the corresponding week of 1904. Consumption caused 67 deaths; pneumonia, 62; heart diseases and nephritis, each, 40; intestinal diseases, 31; violence, including suicide, 25; cancer, 23, and nervous diseases, 22.

Additional Facts.—Dr. Henry J. Burwash requests the publication of additional facts regarding the suit against him, notice of which was made in the last issue of THE JOURNAL. He states that he was not sued for performing an unnecessary operation, but for making a partial autopsy without authority of the mother of the deceased; that permission to make the autopsy was given by an elder brother of the deceased, but the court held that the mother was the only person to grant the privilege; and that in the postmortem examination the body was not mutilated, but an incision an inch and one-half to two inches longer than the original incision was made; that only a digital examination was made through this opening, and that no organs were removed.

INDIAN TERRITORY.

Convicted of Manslaughter.—Dr. J. W. Davenport, Oakman, who shot and killed William Gaines, a mail carrier, in a neighborhood quarrel, has been convicted of manslaughter.

Western District Physicians Meet.—At the meeting of the Western District Medical Association at Muskogee November 14 Dr. Floyd E. Waterfield, Holdenville, was elected president; Dr. J. Hutchings White, Muskogee, secretary; Dr. Jesse L. Blakemore, Muskogee, treasurer. Sapulpa was selected as the next place of meeting.

INDIANA.

Medical Equipment Transferred.—The medical equipment of the Fort Wayne Medical College has been shipped to Indianapolis to the Medical Department of Purdue University.

Removed Diphtheria Sign.—Dr. Clara Harbamal, Corydon, who tore down a diphtheria sign, placed on a house in that town by the local authorities, will be prosecuted for violating the health laws of the state.

Personal.—Dr. Morton L. Bridge, Van Buren, has been recommended for appointment as a member of the Grant County pension board, to succeed the late Dr. Eli M. Whitson, Jonesboro.——Dr. Fred R. Clapp, Ligonier, coroner of Noble County, has resigned.——Dr. Brose S. Horne, health officer of Marion, who has moved to Indian Territory, has resigned.——Dr. Albert H. Combs has been appointed secretary of the Marion Board of Health.——Drs. W. H. and Jay Nusbaum have left Auburn and will locate in Las Vegas, N. M.——Dr. Corydon R. Richmond, the oldest resident of Kokomo and the first mayor of that town, celebrated his ninety-seventh birthday anniversary November 22.

Epidemic Diseases.—During the past week a large number of cases of diphtheria have developed in Corydon and the public schools of the town have been ordered closed.——Fort Wayne reports 36 cases of smallpox, and as the isolation hospital has been burned, many houses are quarantined. Dr. Albert H. Macbeth, the city health commissioner, has turned his barn into a temporary isolation hospital.——An epidemic of intestinal indigestion resembling la grippe is reported from Richmond, with 200 to 300 cases.——Scarlet fever is said to be raging at Hillsboro. About a dozen cases are under treatment and 2 deaths have occurred from the disease.——It is estimated that there are 75 cases of tonsillitis in Shelbyville.——The Junction schoolnouse near Flatrock, Washington Township, Shelby County, has been closed on account of diphtheria.

IOWA.

Dipsomaniac Hospital to Open.—The new Iowa Hospital for Inebriates, at Knoxville, will open about December 15. About 83 patients will be placed under treatment at that time.

Epidemic Disease.—Smallpox is reported from Fayette County, 2 cases being under treatment in West Union and 3 cases at Eldorado.——Scarlet fever is prevalent in Sioux City, and at present more than 60 cases have been reported to the health department.

Southeastern Physicians Meet.—At the thirty-fifth annual meeting of the Southeastern Iowa Medical Society, held in Burlington, November 23, the following officers were elected: President, Dr. Frank M. Fuller, Keokuk; vice-presidents, Drs. J. H. Chittum, Wapello, and James S. Gaumer, Danville; secretary and treasurer, Dr. Charles P. Frantz, Burlington, and censors, Drs. John F. Herrick, Ottumwa; George P. Neal, Fort Madison, and William S. McClellan, Morning Sun. The society decided to meet next year in Burlington.

KENTUCKY.

Physician Wins Suit.—In the suit of T. N. Franklin against Dr. Robert N. Whitehead, Fulton, for $15,000 for alleged malpractice, the federal court at Paducah decided in favor of the defendant November 22.

Epidemic Disease.—The majority of the country schools in McLean County have been closed on account of the prevalence of diphtheria and scarlet fever.——Smallpox has broken out in Pineville. Five cases have been reported and the public schools have been closed.

Personal.—Dr. D. D. Eads, Paris, has moved to Chicago.——Dr. Herbert H. Hunt, Mayfield, was kicked by a horse November 17, fracturing his leg.——Dr. Abiah M. Cartledge, Louisville, who has been seriously ill with pneumonia, is now said to be recovering.——Dr. William A. Rice, Fallsburg, has gone to Redlands, Cal.

LOUISIANA.

New State Hospital to be Opened.—The new Louisiana Hospital for the Insane, Pineville, now nearing completion, will be formally opened December 20, when 500 inmates of the Insane Hospital of the State of Louisiana, Jackson, will be transferred to the new institution. Dr. George A. B. Hays, formerly superintendent of the institution at Jackson, will be superintendent of the new asylum.

Personal.—Dr. Hermann B. Gessner, surgeon in charge of the Seventh Ward Marine Hospital headquarters, New Orleans, was presented by the emergency committee of the Seventh Ward with a silver loving-cup November 6.——Dr. Thomas Y. Aby, assistant quarantine officer at Quarantine, at the mouth of the Mississippi, has resigned, owing to ill-health.——Dr. Arthur W. De Roaldes, New Orleans, has returned after a five months' visit to France.——Dr. Rudolph Matas, New Orleans, has returned after a visit to the North.

Tulane College Opens.—The Medical Department of Tulane University of Louisiana, New Orleans, opened November 6 with a lecture by Dr. Abraham L. Metz. The following changes in the faculty are announced: Dr. Paul E. Archinard, demonstrator of microscopy, has been made assistant professor of diseases of the nervous system; Dr. Oliver L. Pothier, for eleven years senior assistant demonstrator in the microscopical laboratory, has been made demonstrator, with Drs. Joseph D. Weis, Isaac I. Lemann and Maurice J. B. Couret as assistants; Dr. Joseph Hume has been chosen lecturer and clinical instructor on venereal and genitourinary diseases; and Dr. Samuel M. D. Clark has been elected lecturer and clinical instructor on gynecology and obstetrics.

MAINE.

Personal.—Dr. Charles E. D. Lord, Biddeford, has moved to San Francisco.——Dr. Samuel B. Hunter and family, Machias, have gone to Seattle for the winter.

Diphtheria.—The prevalence of diphtheria is causing uneasiness in the town of Mexico, where the schools have been ordered closed on account of the disease.

Hospital News.—Biddeford will probably secure a hospital through provisions in the will of the late Moses E. Webber. It is expected that $75,000 will be available for this purpose.

College Opens.—The eighty-sixth annual course of lectures at the Medical School of Maine, at Bowdoin College, Brunswick, began October 23.——Drs. Frederick H. Gerrish and Alfred King have been transferred to the Portland branch of the school and their places have been taken by Drs. Walter E. Tobie and Wallace W. Dyson, Portland, and Dr. Hiram L. Horsman, Augusta.

Penobscot Physicians Meet.—The Penobscot Medical Association held its annual meeting and banquet at Bangor, November 21. Dr. Seth C. Gordon, Portland, was the guest of honor and delivered an address on "The Relation of the Physician to the State." The following officers were elected: Dr. Everett T. Nealey, Bangor, president; Drs. Arthur J. Bradbury, Old Town, and J. Albert Lethiecq, Brewer, vice-presidents; Dr. Bertram L. Bryant, Bangor, secretary and treasurer; and Drs. Daniel McCann, Atwell W. Swett and John B. Thompson, all of Bangor, standing committee.

MARYLAND.

Personal.—Dr. Thomas W. Koon is critically ill with blood poisoning at Cumberland.

Tuberculosis Fund Grows.—Contributions to the funds being raised by the Maryland Tuberculosis Association now amount to $792.50.

Builds Cottage.—Jacob Epstein, Baltimore, has had erected at the Hospital for Consumptives, near Towson, a new building which, in his honor, will bear the name "Epstein Cottage." It cost $1,000 and was planned after the style of building used for the treatment of consumptives in the Adirondacks and elsewhere.

Residence Burned.—The suburban home of Dr. William Gray, Chevy Chase, was burned to the ground November 21, with a loss of $10,000, partially covered by insurance.

Baltimore.

Smallpox.—Several cases of smallpox have occurred recently in South Baltimore.

Personal.—Dr. Randolph Winslow has been elected president of the North Carolina Society.——Dr. E. Linden Mellus has taken a villa near Naples, where he will spend the winter.

The Nostrum Question.—Mr. Samuel Hopkins Adams, who has recently rendered the public such a service by his exposure of patent medicine frauds through a series of articles in *Collier's Weekly*, addressed the Baltimore City Medical Society December 5 on "Medical Support of Nostrums."

Osler to Return.—Dr. William Osler will leave England about December 16 and will be in Baltimore January 5, where he will remain through the month. His visit probably has connection with the system of medicine which he is about to publish, in which he will have the assistance of Dr. Thomas McCrae.

Book Auction.—On November 28 the sale of autograph books took place at the Arundel Club by the Quarter Club for the benefit of the Mountain Sanitarium for Consumptives at Mount Airy, Md. Among books sold were those by Drs. S. Weir Mitchell and William Osler. The wit of Mr. Bonaparte and Mr. France, the auctioneers, drew a large crowd and a large sum was realized.

MASSACHUSETTS.

Fire Damage.—The offices of Drs. John C. Irish and Robert E. Bell, Lowell, were damaged by fire and water November 3.

Diphtheria.—The Brockton Hospital has been closed and placed under quarantine on account of an outbreak of diphtheria.

Leper Hospital.—The five lepers in the state have been transferred to Pekikese Island. The State Board of Charities has imported from India a supply of leproan which will be used for treatment of these lepers. Dr. Louis Edmunds, Harwich, associate medical examiner of Barnstable County, has resigned to become superintendent of the leper colony.

Bequests.—The will of the late Edward Walker leaves in trust an estate of nearly $1,000,000, one-third of the income from which is devised to the Springfield Hospital.——By the will of Mrs. Caroline H. Webber $1,000 is bequeathed to the Dickinson Hospital, Northampton.——The late Robert Carruthers, Lawrence, has left legacies of $500 each to the Lawrence General Hospital, the Lowell General Hospital and the Blackburn Infirmary, Lancashire, Eng.

Suitcase Suspect Acquitted.—A verdict of not guilty was returned December 2 by the jury in the case of Dr. Percy D. McLeod, Boston, charged with being an accessory after the fact to the illegal operation which resulted in the death of Susanna A. Geary, the victim of the "suitcase tragedy," and with concealing the crime. William E. Hunt and Louis W. Crawford, who pleaded guilty to being accessories after the fact in this case, were sentenced to terms of not less than six nor more than seven years in the state penitentiary.

MICHIGAN.

Detroit Personal.—Dr. Isaac L. Polozker, physician of Wayne County, has resigned and will take a long postgraduate course.——Dr. Herman Kiefer celebrated his eightieth birthday November 19.

Harison Re-elected.—Dr. Beverly D. Harison, Sault Ste. Marie, was reappointed a member of the Michigan State Board of Registration and Medicine for the term 1905 to 1909, and in October last was re-elected secretary of the board.

Physician Acquitted.—Dr. J. J. Sweetland, Mottville, Berrien County, who was indicted more than a year ago by the federal government, charged with destroying a rural mailbox, was tried November 21, found not guilty and discharged.

Ill and Injured.—Dr. James Eakins, Alpena, was taken suddenly ill November 26, and is regarded as being in a serious condition.——Dr. Charles W. Isaminger is critically ill with cerebral hemorrhage at his home in Alpena.——Dr. Charles H. Lewis, Jackson, sustained severe bruises about the head and body in a runaway accident November 21.——Dr. James W. Freeman, Saginaw, is critically ill.

Epidemic Diseases.—The Fifth Ward school, Ann Arbor, was closed by the health officers November 15 on account of the prevalence of scarlet fever.——The Board of Health has decided to close the schools of Gladstone on account of an epidemic of

diphtheria. There are said to be more than 50 cases at present in the city.——In Detroit last week 16 cases of diphtheria and 11 cases of scarlet fever were reported.

Ann Arbor Hospital News.—The university regents have decided to build an addition to the University Hospital at an expense not to exceed $14,000, to constitute a ward for diseases of the eye, ear, nose and throat and to be in charge of Drs. Parker and Canfield.——The university regents have refused to allow a detention hospital for contagious diseases to be erected on the same grounds as the University Hospital.

MINNESOTA.

Personal.—Dr. Ole G. Hagen, Butterfield, has been appointed a physician on the staff of the Mount Lake Hospital.——Dr. John C. Boehm, St. Cloud, has been appointed chairman of the medical advisory board to the university board of regents.

Physicians Express Gratitude.—The Hennepin County Medical Society has addressed a letter to Mr. Al. J. Smith, prosecuting attorney of Hennepin County, expressing the appreciation of the members of the earnest work of the official in prosecuting those engaged in illegal and criminal medical practices.

Hospital Notes.—The first sod on the site of the State Tuberculosis Sanatorium at Walker was turned November 21 by the chairman of the state board of control.——The Maternity Hospital, Minneapolis, was damaged by fire to the extent of $300 November 1.——The bazaar held at the West Hotel, Minneapolis, cleared nearly $2,000 for the Northwestern Hospital.

NEW YORK.

School Quarantine Lifted.—The six schools in Woodhaven and Union Course, which have been closed on account of diphtheria, have been reopened.

Rabies Prevalent.—Within the past ten days three persons have been sent from Buffalo to the Pasteur Institute, New York City, to be treated for bites from rabid dogs. Since February 15 more than a score of persons have had to go to New York from Buffalo for treatment.

Down on Hazing.—Dr. Roswell Park has written a strong letter of protest to each of the secretaries of the secret fraternities of the Medical Department of the University of Buffalo, concerning class rushes, class conflicts and hazing, in which this mark of rowdyism is absolutely condemned, and urging the societies to co-operate with the college authorities to abolish these evils.

New York City.

Contributions to Hospitals.—Contributions to the Woman's Fund of the General Collection for the Associated Hospitals have been officially reported and amount to over $2,000.

Large Hospital Fair.—The receipts from the Jewish Hospital fair in Brooklyn, which was opened by Governor Higgins in the Twenty-seventh Regiment Armory November 27, were over $40,000 at the end of the second day, and it is confidently expected that from $75,000 to $100,000 will be realized by the close of the fair.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 25, 406 cases of tuberculosis, with 162 deaths; 326 cases of measles, with 11 deaths; 310 cases of diphtheria, with 31 deaths; 155 cases of scarlet fever, with 11 deaths; 65 cases of typhoid fever, with 9 deaths; 17 cases of cerebrospinal meningitis, with 7 deaths, and 121 cases of varicella.

Water Plans Opposed.—At the hearing on the plans for extending the water supply of New York City by drawing on the Catskill watershed unexpected opposition developed. There were fifty or sixty protests from various towns and villages along the course of this watershed filed, and more are promised. It seems likely that the board will condemn the plan or refer it back to the city commission for amendment.

Pneumonia and Measles.—The Health Department announces that this is the "measles year" and that this disease is usually accompanied by a decided increase in pneumonia; hence they are redoubling their efforts to combat these affections by urging a fight against dust and by greater activity in the anti-spitting crusade. The public has been warned against cold, alcohol and fatigue as the three direct invitations to pneumonia.

NORTH CAROLINA.

New Sanatorium.—The Tuberculosis Sanatorium established by the Royal League at Black Mountain has been completed and is open for patients.

Personal.—Dr. Marshall H. Fletcher, Asheville, has returned after a trip to New York.——Drs. Carl V. Reynolds and Jere Cook, Asheville, sailed for Europe November 15.

Additions to Sanatorium.—A new wing has been added to the Broad Oaks Sanatorium at Morganton, which will be devoted to private pay patients. Dr. Hugh Thompson, Reedsville, has been appointed assistant resident physician to the sanatorium.

Correction.—In a recent issue of THE JOURNAL it was stated that Dr. M. Avery, Salisbury, had been recently convicted of defrauding the government of large sums and had been sentenced to a term in the federal penitentiary. We are informed by our North Carolina correspondent that there is no such person in Salisbury as Dr. M. Avery, but that some weeks ago a distiller named D. M. Arey was convicted and sentenced as noted.

Need More Room for Insane.—It has been suggested by the lay press that the insane hospitals of the state are receiving and treating as patients in their wards persons other than indigents. Under a strict construction of the statutes only indigents are legally admissible to the state hospitals for the insane, but practically the letter of the law has been so ignored that 97 per cent. of the inmates of state institutions are treated at the public expense, while an average of more than 69 per cent. of the inmates are cured. Yet there has been a constant and steady accumulation for many years of incurables in each of the hospitals until, with the increase of insanity, the accommodation provided in state institutions has become insufficient to accommodate the insane of the state. Dr. P. L. Murphy, superintendent of the Western Hospital for the Insane, Morganton, has repeatedly called the attention of the legislature to this imperative need, and now, at last, additions to the State Hospital at Raleigh are being made, and an investigation is to be instituted by the governor to ascertain the financial status of the inmates cared for at the public expense, with a view of possibly securing more space for indigent patients.

OHIO.

New Cincinnati Hospital.—The new city hospital ordinance approving the plans and specifications for 18 of the 35 proposed buildings, at an estimated cost of $1,750,000, and a bond issue to start work at once on the administration building and one ward building, has been passed unanimously by the city council.

Public Lecture on Consumption.—Under the auspices of the Academy of Medicine of Toledo and Lucas County, Dr. S. A. Knopf, New York City, will deliver a lecture at Memorial Hall, Toledo, December 14, at 8 p. m., to which the public is invited. Dr. Knopf's subject will be "The Tuberculosis Problem; How It May be Solved."

Personal.—Dr. W. E. DeCourcy, Cincinnati, who is recovering from a long and serious illness, will spend the winter in the South.——Dr. L. M. McFadden, Staunton, has been elected to the legislature from Fayette County.——Dr. Thomas B. Marquis, Lisbon, is seriously ill with typhoid fever.——Dr. Oscar Berghausen, Cincinnati, has gone to Berlin.——Dr. Alexander J. Erwin and family, Mansfield, have gone to their winter home in Los Angeles.——Dr. William D. Hamilton, Columbus, who was recently operated on for appendicitis, is improving and will soon return home.——Dr. Joseph E. Boylan and daughter, Cincinnati, sailed for Europe December 5.

PENNSYLVANIA.

Hospital Dedicated.—The new Lancaster General Hospital, erected at a cost of $75,000, was dedicated November 30.

New Hospital for Braddock.—Braddock is to have a general hospital. The old Mills homestead has been purchased at a cost of $30,000, and alterations are now under way that will cost about $15,000 more. It is expected that the institution will be ready to receive patients early in the spring. The Braddock Medical Society is a prime mover in the work and is fully represented on the board of directors of the hospital.

Philadelphia.

Medical Society Elects Officers.—At the regular meeting of the University of Pennsylvania Medical Society November 17 the following officers were elected for the ensuing year: President, Dr. David Riesman; vice-presidents, Drs. J. Dutton Steele and J. B. Carnett, and secretary, Dr. John M. Cruice.

Personal.—On December 5 a farewell reception was tendered Dr. Josiah C. McCracken, who will leave for China during this month to establish a medical school which shall represent the University of Pennsylvania in the city of Canton. An address

was made by Prof. Harlan Page Beach of Yale University.—— Dr. Robert H. Chase was selected chairman, and Dr. William H. Good, clerk, of the newly organized Northeast Branch of the County Medical Society.

Health Report.—The total number of deaths from all causes reported for the week was 463, as compared with 472 for last week and 426 for the corresponding week of last year. The principal causes of death were: Heart disease, 58; acute respiratory disease, 68; enteritis, 9; appendicitis, 3; Bright's disease, 36; typhoid fever, 12; diphtheria, 18; tuberculosis, 41; cancer, 18; apoplexy, 25; premature birth, 12; suicide, 7; accidents, 14, and marasmus, 8. There were 253 cases of contagious disease, with 31 deaths, as compared with 269 cases and 27 deaths for the previous week. There were 85 new cases of diphtheria, with 19 deaths. This disease has caused the officials of the health department some concern.

TEXAS.

Personal.—Dr. and Mrs. John Grammer, Fort Worth, returned November 20 from a summer in Europe.

Great Gifts to Sanatorium.—On November 17 $90,000 was pledged in thirty-five minutes for the building of the Baptist Memorial Sanatorium, Dallas.

Eighth District Medical Association.—The association for this district held its fourth semi-annual meeting at Bay City November 14 and 15. Dr. James E. Simons, Bay City, was elected president. The next meeting will be held in Cuero, April 4 and 5, 1906.

GENERAL.

Philippine Journal of Science and Other New Papers.—The Bureau of Government Laboratories at Manila will issue a journal in place of the bulletins which have been the method of presenting results of research and experience in the Philippines. It is to be called the *Philippine Journal of Science;* each issue to consist of 112 pages and free use is to be made of illustrations. The scope of the journal will be general, but the medical part will occupy more space than any other department. This proposal indicates that an interesting and valuable journal will be created.——The *Northwestern Lancet* has now become the *Journal of the Minnesota State Medical Association and the Northwestern Lancet* and will be published under the direction of the council of the association. The publication committee consists of Drs. W. S. Fullerton, Thomas McDavitt and F. A. Knights, and the editor is Dr. W. A. Jones. The *Northwestern Lancet* has always published excellent original matter and has maintained a commendable editorial stand. The Minnesota profession deserves praise for completing this arrangement and, with the aid of a united profession, a journal should result more excellent even than has been the past character of the *Northwestern Lancet.*—— The *Journal of the New Mexico Medical Association* is presenting a bright appearance. Dr. G. W. Harrison, the editor, and Drs. G. S. McLandress and J. H. Wroth, assistants, are issuing a newsy little monthly.——The *Journal of Physical Therapy* is a new magazine, edited by Dr. G. M. Blech, Chicago, and published by Frank S. Betz, Hammond, Ind. As its name indicates, it will be devoted to radiotherapy and the various mechanical agencies.——The *Central States Medical Monitor* is the result of the consolidation of the *Medical and Surgical Monitor* and the *Central States Medical Magazine.* Dr. Samuel E. Earp, Indianapolis, will be the editor and his salutatory promises an independent, impartial publication for the general practitioner.

Yellow Fever in Cuba.—Passed Assistant Surgeon von Ezdorf reported from Havana, November 20, that all cases at Havana which have been diagnosed as yellow fever are passed on by a board of diagnosis. When a suspicious case is reported the patient is taken to the hospital and the residence fumigated for the purpose of killing mosquitoes. The board of diagnosis is notified and after making careful study of the case, confirms or negatives the diagnosis of yellow fever. All the cases have been traced to what is known as the infected district, which is located in the central portion of the city. Several new cases have been reported and Dr. von Ezdorf states that the situation in Havana is becoming serious. Acting Assistant Surgeon Nunez reports that in view of the prevalence of yellow fever in Havana an active campaign is being organized in Matanzas, by direction of the chief health officer of Cuba, to prevent its possible importation and propagation in that city. Two of the city physicians have been detailed to inspect and to keep a record of all the non-immune passengers arriving from Havana by train, noting their addresses, and reporting to the local health officer their condition, which is ascertained by daily visits for five consecutive days after arrival in the city. The local health officer has recommended organizing a special commission for contagious diseases out of the most prominent practitioners in town, to act in an advisory capacity in the determination of doubtful diagnoses. He also points out the necessity of increasing the mosquito brigade and the force devoted to general sanitation, in order to insure a better service, and hence the probability of its success in averting the propagation of yellow fever in the case of reaching that locality. Precautions will also be observed by the quarantine authorities with all vessels arriving from Havana, particularly those in the coastwise trade, hitherto free from quarantine restrictions, to meet any emergencies that may arise. Non-immune passengers arriving at Santiago by train from Havana are examined by the medical inspectors before they are allowed to leave the cars. The same precautions are observed at Camaguey.

CANADA.

Typhoid Fever in Winnipeg.—The number of typhoid cases in Winnipeg during November was much less than for the same month last year.

Smallpox in Ontario.—Smallpox has appeared at Belleville, Ont., and at another point in Ontario, 15 miles from Sudbury. Toronto has now 15 cases. The disease has also appeared in Queens County, New Brunswick.

Fall Medical Examinations of the Ontario Medical Council.—These examinations were held in Toronto during the week ending December 2. There were 33 candidates in the primary and 45 in the intermediate and final examinations.

Personal.—Dr. William J. Bannister, late of Cork, Ireland, has commenced practice in Winnipeg.——Dr. Harper Wilson, who has been surgeon for the Crow's Nest Pass Coal Company, of Fernie, B. C., has decided to locate in Winnipeg.

Toronto's Vital Statistics for November.—During the month of November just past there were 411 births in Toronto, 328 marriages and 293 deaths. In October the births were 737, but that month the city clerk sent out special notices reminding parents of registration. Apparently there are a great many physicians and parents in Toronto who do not believe in registering births. Of the total number of deaths in the city during November, 58 were due to pneumonia and tuberculosis. Seventy children under one year of age died during November, and fifty persons over 70.

FOREIGN.

Fewer Medical Students in Austria.—In 1895 the degree of doctor of medicine was conferred on 1,011 medical students in the universities of Austria and Hungary. In 1904 only 561 similar degrees were conferred.

Chair of Applied Therapeutics at Paris.—The *Presse Médicale* for November 18 states that the medical faculty of the Paris University has reported favorably on the creation of a professorship of applied therapeutics. The funds for the endowment of the chair were presented by the duc de Loubat.

Plague in Japan.—The American consul at Kobe reports that plague is present in Kobe and in Osaka. A dispatch from Seattle states that the officers of the steamship *Dakota* report that this disease is raging in Yokohama and that probably no more vessels will be given clean bills of health at present.

Austrian Society for Combating Quackery.—A meeting was called at Vienna to found a new society with the title *Gesellschaft zur Bekümpfung des Kurpfuscherthums.* Members of various medical societies attended, as also representatives of the health office, city council and police. Dr. Grün outlined the present status of irregular practitioners' quack practices in Austria, and Dr. Charas described the aims of the new organization. Professor Kassowitz was elected president and Professor Ausserer and Dr. Charas vice-presidents.

Medical Certificate for Chauffeurs in France.—The last *Semaine Médicale* states that the minister of the interior in France appointed a committee representing different government departments to suggest measures to regulate the automobile evil. The committee met in October and its report has been handed in to the authorities who have the matter now under advisement. The report states that the accidents from automobiles are due mainly to the heedlessness or the insufficiency of the chauffeurs. At present there is no age limit, any one can run an automobile, a child of 12, an epileptic or degenerate of any kind. The committee urged the adoption of an age limit, graduating it to the power of the machine. For an automobile of less than 35 horse power, a chauffeur 18 years old might well suffice, but for more powerful machines the lowest age limit should be 21, and the chauffeur must have learned to manage the machine by practicing with less powerful ones at first. The report also urges the adoption of the re-

quirement of a medical certificate to the effect that the candidate for driving an automobile must be sound in mind and body.

In Russia.—The *St. Petersburg med. Wochft.* for November 11 appears somewhat curtailed, "owing to the general strike among the printers." A brief notice states that physicians at many points are joining in the present agitation for freedom. A general meeting of physicians connected with the hospitals of Moscow was held late in October and the following resolution was adopted: "Although the physicians regard the strike as an effectual and the least bloody measure in the struggle for freedom and justice, yet they do not join in the strike, but remain at their posts, prepared to cope with emergencies if there is bloodshed. In order, however, to show that they indorse the general strike, they set aside 20 per cent. of their salaries for a strike fund, under condition that some representatives of the hospital physicians be appointed on the general central strike committee. The administrative authorities of the city and hospitals are hereby warned that any attempt to enforce repressive measures on the physicians of the hospitals will be met with withdrawal of the physicians from their posts, disclaiming all responsibility for the consequences that may ensue."

Cholera in Europe.—The German health authorities are anticipating that there will be another outbreak of cholera in Germany in the spring when the rivermen come through from Russia. A number of new regulations have been announced, among them that lime for disinfection will be supplied from the supervision stations to rivermen and others on the navigable streams, the expense to be borne by the general government. Persons traveling and working along navigable rivers in the cholera district are liable to contract cholera if they drink the water of streams, and, therefore, official arrangements must be made to supply them with good drinking water. The workmen along the river must be inspected daily to see that they have a suitable supply of pure drinking water with them. Supplies of drinking water for vessels navigating these streams must be attended to by the local sanitary authorities of the communities along the rivers, who are the ones most interested in the river traffic and consequently should bear the expense. Special measures are advised for disinfection of the rafts of logs coming through from Russia, as also of those suspicious of cholera. All the articles on the rafts of no value are to be burnt, and the others disinfected. For this purpose a mixture of equal parts of crude carbolic acid and a cheap oil, linseed or petroleum, is recommended. The mixture is limpid and has a tendency to spread out on the surface of the water, so that it is particularly adapted for disinfecting the stagnant water in the cracks between the logs and also the floor of the raft and suspicious points along the river bank. It is not recommended for disinfection of dry hay or straw, but serves admirably for damp articles.

Student's Number of French Exchange.—The *Progrès Médical* for November 11 is an exceptionally large number, and more than a hundred pages are devoted to data in regard to universities, medical colleges, medical societies, prizes offered and other information of interest to medical students and physicians. The institutions listed include those of all the French-speaking countries, Belgium, Canada and Switzerland, as well as France and the French colonies. It is a valuable reference work for a physician or student intending to visit any of these countries. The journal is published rue des Carmes 14, Paris, Bourneville, the eminent neurologist, being the editor-in-chief, as also of the *Archives de Neurologie*. We learn from this educational number that instruction in oto-rhino-laryngology is not included in the official medical course in France, except at the medical school at Bordeaux, where there is an assistant professor of this specialty, and fourth-year students are required to attend a course of lectures on this subject. Elsewhere instruction in oto-rhino-laryngology is left to private initiative, a few eminent specialists holding private courses and clinics. The country doctor, during his five years' study of medicine, never had occasion to look at a tympanum, a larynx or inferior turbinate, and never used an otoscope, and yet he is consulted for oto-rhino-laryngologic affections perhaps as frequently as any other, and has to treat them as best he can. The signed editorial on the subject urges compulsory instruction in this specialty, remarking that all that need be done is to copy Germany, who, "notwithstanding her ardor for war, does not forget the peaceful conquests of science."

Behring on His Tuberculosis Remedy.—The last *Allg. med. Ct.-Ztg.* cites the Paris *Temps* to the effect that Dr. Bernheim, of Paris, applied at once to von Behring, asking him for some of his new remedy to try it in the Tuberculosis Polyclinic, which has just been founded by the Paris Antituberculosis League. Behring wrote in reply: "My new remedy (*Heilmittel*) can not be sent away without the danger of losing some of its specific properties. I obtain the TX from the animal body in a form which can be likened most appropriately to that of an explosive substance. As soon as the remedy leaves its place of production, that is, the living body, it is exposed to changes which have a great resemblance to coagulation of the blood as soon as the blood flows out of the blood vessels. It is precisely on this account that the control of the curative value of my remedy is possible only at the place of origin and production and only by impartial investigators who have thoroughly learned under my direction the great difficulty and tediousness of the process required for the production of TX. Such precautions are by no means unusual in the testing of new remedies. I remind you only of Pasteur's protective inoculations against hydrophobia, which can not be handed over freely to every clinician, to say nothing of every general practitioner. Besides this, the application of TX is much more difficult and delicate than that of the Pasteur vaccine against hydrophobia. I have more important reasons for refraining from publishing at present the mode of production of the TX. I reserve the description of the process for a later occasion, but I may inform you now that I am at present discussing with Metchnikoff the feasibility of producing my TX in the Paris Pasteur Institute, whence its application to the sick can be supervised. Not until the first series of experiments and several months of observation have demonstrated this TX to be usable shall I think of establishing other centers for treatment by my method. All this readily explains why I announced that I should not publish information in regard to my new tuberculosis remedy until after an entire year." (Behring's original communication was given on page 1339.)

Hirschberg's Impressions of America.—Prof. J. Hirschberg has been contributing a series of articles to the *Medizinische Klinik* under the heading, "My Third Trip to America," describing his visit to Portland as the guest of the American Medical Association at its last annual meeting. He remarks in regard to American science, especially ophthalmology, that it has gained by immigration as well as by natural growth, citing the names of several German ophthalmologists now citizens of the United States, while paying a high tribute to the general standing of the specialty and giving a historical sketch of its development in this country. He tells his countrymen that any one stepping into the bubbling spring of American hospitality must have a powerful constitution, an indestructible stomach and a certain equipoise, for he can count on immense distances and unusual demands on his endurance. He was on the special train on July 4, but had sufficient experience of the celebration as the train passed through cities to enable him to appreciate the articles in THE JOURNAL of the American Medical Association on the subject. He cites parts of them entire, remarking that they will certainly arouse in his readers the same amazement and horror as in him when he first read them. Another thing which much impressed him was the small number of children in the true American families which he met. He remarks in regard to the American institutions of divorce, lynch and graft that they are part of the children's diseases through which this great and young country is passing. He visited certain important imported scientific libraries, which, he remarks, have been lost to Germany, as the government has no money for such purposes. The Educational Number of THE JOURNAL is frequently quoted in his articles, with the comment that Germany has nothing of the kind, although the leading British and French journals publish an annual students' number. He mentions THE JOURNAL frequently, describing its phenomenal growth and saying that it deserves the attention of the German reader, which, he adds, "it has already found, as our important medical journals review and abstract its contents regularly." He regards the American Medical Association, "in the maner of its organization and workings, as of the greatest importance for the entire people, as well as for the medical profession, in the United States." The Berlin Docenten-Verein for Vacation Courses has had 16,293 physicians attend its lectures between 1880 and 1894, among them thousands of Americans. He has had hundreds attend his own courses, and his general impression is that in talent they average about the same as the German students, and their industry is satisfactory, but their preliminary training is not quite equal to that of the Germans. In reply to a question as to what he thought of the "exchange of university professors," he remarks that "to date there has been no exchange of peers." In conclusion, he expresses surprise at the long-suffering patience of the American public in allowing the railroads to impose their preposterous lengths of ticket on the travelers. On his return trip he finally laid his ticket aside for a souvenir and paid his fare from city to city rather than handle what he calls "the rattlesnake of the American railroads."

Pharmacology

BIOPLASM.

In our issue for November 18 we graphically showed in these columns that "Bioplasm" and "Sal Lithin," exploited by the Bioplasm Company, of New York, are being advertised directly to the public in a manner that is not usually adopted by an honorable firm, and which in itself shows fraud or at least an attempt to deceive. Our exposé of this Machiavelian method of appealing to the public should be enough to deter any thinking physician from prescribing this nostrum. Since it is advertised in medical journals which make a pretense at decency, one of which is a weekly, we presume it is necessary to give more attention to this product and to show the character of the claims made for it by its exploiters.

ITS COMPOSITION.

The circulars sent out by these people bear evidence of having been written by persons who are either densely ignorant of the subject on which they write or decidedly unscrupulous. A glance at the following quotations taken from these circulars shows very clearly of what a mass of absurdity and contradiction they are composed:

"After a careful extraction under aseptic methods the enzymes are treated by a process which unites them, creating a new product or ferment which resembles closely the bioplasm of Dr. Llonel S. Beals. . . . There is in bioplasm the several enzymes[1] (ferments) of digestion which include nuclein, lecithin, trypsin, etc."

In another circular we are told:

"Bioplasm is produced from the digestive and ductless glandular organs of young herbivorous animals, but it essentially differs from the glandular extracts and nuclein preparations. . . . The defibrinated products after cultivation are desiccated and finally triturated with chemically pure sugar of milk. The exceptional therapeutic virtue of bioplasm is chiefly attributed to the compound element acquired by the process of cultivation described. It positively contains nothing besides the organic products stated, the vegetable ferments being no longer used."

Of course, intelligent physicians know that there is no process by which digestive enzymes may be united, creating a new product of a ferment nature. In the circular we also find this positive statement:

"Bioplasm contains absolutely nothing besides the organic products stated, and its marvelous curative properties reside in the basic ferment resulting from action of the 'mother substance' of the several digestive ferments upon each other."

We learn from another circular:

"Bioplasm . . . non-toxic preparation of animal and vegetable enzymes so compounded as to preserve their original cell vitality."

Note we have just quoted that the vegetable ferments are no longer used, and that only the organs of young herbivorous animals are utilized. The enumeration of nuclein and lecithin as digestive enzymes is sufficient to show that the writer of the circular knows little of the subject on which he has written.

ITS THERAPEUTIC CLAIMS.

The therapeutic claims made for this cure-all are as grotesque and as absurd as are those which are made regarding its composition. It would be wearisome to enumerate all the diseases which it is claimed to cure, but a few taken at random will not be out of place:

"Equally efficient in morbid obesity and emaciation."

"A fatal epidemic of diphtheritic toxemia in West Virginia was checked only when Bioplasm was used."

Here is what appears on the label as it is sold in the drug stores:

"Indications: All neuroses or other disorders in which assimilation and metabolism are faulty. Most prompt and powerful restorer of leucocytes and phagocytes, immunizing by strengthening bactericidal properties of blood. Unique as neuro-nutrient and blood builder, invaluable in Tuberculosis, Typhoid, Scarlet and Malarial Fevers; in Diphtheria, Pneumonia, La Grippe, Dysentery, etc.; prompt specific in all forms of indigestion, unequaled in Locomotor Ataxia, in Pelvic diseases of women and convalescence."

It may be interesting for physicians who are prescribing bioplasm to have quoted for their edification some of the testimonials from the laity:

BROMIDROSIS (OFFENSIVE PERSPIRATION).

"'I found relief in a short time after beginning Bioplasm, more noticeable to others than myself. I think it is due to say that, while I was taking it, I used no other remedies.'"

"IMPOTENCE."

"I became incompetent at the age of 45, as a result of a long nervous strain from overwork and unusual responsibility. For four years I have tried many doctors and many remedies, including the rest cure, with some improvement in my general health, but none in my functions. I was gradually drifting towards melancholia, when a physician advised me to try Bioplasm. I did so faithfully, and inside of a week noticed a change in my feelings. My depression disappeared and my ambition returned, and gradually all my powers and functions were restored to me. I used nothing but Bioplasm, except an occasional aperient. In my whole vigorous life I was never better in every way than I am now—and I consider myself a perfect man, thanks to Bioplasm. This should be made known to the million sufferers, such as I, and you may use this as you see fit."

"INFANTILE INDIGESTION.

. . . "We had no more trouble with baby after using that sweet powder (Bioplasm), which she took greedily, and the only medicine you have prescribed which we have not had a struggle with her to take. The relief from suspense is great, I assure you." . . . .

A WONDERFUL CURE.

Among the diseases in which Bioplasm seems to get in its work most effectively is tuberculosis, and if one-tenth of what the literature claims for it were true, consumption would soon be a thing of the past. Here is one instance worth recording: A certain physician reported one of the most rapid cures ever effected. His patient had night sweats that were very bad, had been to Colorado, "has taken all patent medicines on the market," his previous physician gave him up and said he could not live through the winter; nine physicians had treated him and given him up, assuring him that his days on earth were few.

This is enough to show that the poor patient was in the very last stage, and yet a miracle was performed, for after giving the Bioplasm for a week the testimonial says:

"The change in my patient during the seven days of treatment is most remarkable. The night sweats have ceased. The appetite has improved, and the condition of the lungs has improved to such an extent as to make me sanguine where I have been utterly hopeless. . . Doctor, I feel like a new man. My strength is rapidly returning, and all I want now is a little more time and Bioplasm, and Bio will put me on a sound basis for the enjoyment of life, and a happy old age—a living chagrin to the many physicians who have been pointing me to the grave."

But there is another side to this bright picture. Before us is correspondence to the effect that the patient died soon after this testimonial was written. The doctor who reported the remarkable cure had been in practice but a little while. He evidently imposed on himself, and in a recent letter he expresses regret that he wrote as he did. It is for this reason that we omit his name. In a letter recently received he says:

"Yes, I have used Bioplasm a number of times since with absolutely no results. . . . I was very enthusiastic at that time and it is certain that I would not attach such value to the treatment as at the time mentioned. When I wrote to the Bioplasm people, it was simply with the hope that their product might be of value to those afflicted with tuberculosis."

LOCOMOTOR ATAXICS CURED.

The following letter, from one whom we will call X, as we do not care, under the circumstances, to publish his name, is one of the bits of literature that is doing good work for Bioplasm:

————, June 8, 1905.

Bioplasm Company, 100 William Street, New York City:

Gentlemen:—Your inquiry about Mr. R——, the tabetic patient from Mexico, who has been taking Bioplasm for some seven or eight months, I want to answer briefly, so as to cover the ground.

Mr. R—— is about 45 years old, rather frail all his life. . . . Something less than a year ago he began to experience trouble with his legs and general health, . . . and on consultation with doctors was promptly pronounced a tabetic, having almost all the classical symptoms. His people here came to me, asking what to do. I could only advise Bioplasm. This was begun as soon as he could get a supply from you, in the meantime being treated with strychnin, massage, and so forth, ... No improvement. Soon after beginning Bio, felt better. Five or six months ago he came here. When he arrived he could not get on a street car. To see him walk was agony. Soon he was taken to the cars with an attendant. Shortly after he was going around alone. Took long walks. Got better every day. He called on me yesterday, and upon inquiry, said: "The padded sensation of soles still present to some degree, and knee-jerk absent. Aside from these, I consider myself a well man." He looks well, feels well, walks well, and as far as can be told, IS well.

Could all ataxics see this case as I have seen it, they would send in such a blast for Bio that you would flee from it. Doubtless, "things seen are mightier than things heard" (of), and there are so many "cures" reported, that, like miracles, dwindle at short range, that one more or less will not count for much—in print. But I have seen this, and I believe.

Since coming here, Mr. R—— has taken Bio constantly, and also has had massage twice a week. No other treatment, except that he has been going through some of the kicking for "re-education."

Yours very truly,
——— M.D.

A physician in Kansas wrote to the Bioplasm people, asking them to give him the names of some reputable and well-known physicians who had used Bioplasm with the success that was claimed for it. In reply the Bioplasm people said:

"We take pleasure in referring you to Dr. X, whose letter we enclose herewith (see above), and who is well known and highly esteemed in ——."

We had already written for information in regard to Dr.

1. We quote spelling and grammar exactly in all these extracts.

X and received a reply to the effect that no such physician was practicing in ———. On receiving the communication from our Kansas correspondent we again tried to get information in regard to Dr. X, which resulted in the following letter just received from our investigator:

In regard to Dr. X, of whom you wrote me a few days since: He graduated from ——— years ago; he suffers from locomotor ataxia, and can only get around in a wheel chair; he is a deaf mute, and has been in that condition for ten years; he has not practiced any for twelve years; he has no license in this state or county. He uses Bioplasm himself, and thinks he derives benefit from it. He says that he only recommends it from his personal experience. Dr. C. is his attending physician and has charge of him in a general way. Dr. C. says that he is a perfectly innocent, well-meaning, broken down man.

We have followed up several other testimonials and it would make interesting reading if we had space to devote to a record of the results of the investigation.

One physician from Pennsylvania writes:

"I am glad that Bioplasm is finally being exposed. About two years ago, the Bioplasm people imposed on we younger physicians by giving us testimonials and ending with selling us five bottles of their dollar size for $2.50. I dispensed an entire bottle with no effect whatever in any of its so-called usages. The other four I have still as a reminder of my folly. A few days ago a 'locomotor ataxic' told me of his wonderful new cure or 'sure cure' and behold it was Bioplasm which he got direct from the firm with their wonderful 'epitome.' He had just run out of his '175 tablets for $1.50,' and wanted to get some more."

When some great disaster overtakes a community and the dead and dying lie scattered about, fiendish ghouls steal forth to despoil the dead and the helpless. By common consent such loathsome creatures are usually ordered shot when found at such work; but with what words can we characterize those still more loathsome creatures who scent quarry in that vast army of the sick and miserable, who, loath to acknowledge the presence or approach of the king of terrors, turn to those who speak them fair with bright promises of succor while they rob them of a few dollars and, far worse, ofttimes of the one chance of help which medical science affords? And what shall be said of physicians who, consciously or unconsciously, aid in such a despicable business?

THE SUBTLE POISONS.

BY SAMUEL HOPKINS ADAMS.

Under the above title Mr. Adams, in *Collier's Weekly*, December 2, exposes some of the nostrums that contain acetanilid, morphin, cocain, etc., but the acetanilid group receives the greatest attention. At the head of the article are given the names of twenty-two persons who have died from acetanilid poisoning, as reported by the newspapers. The article, as were the others, is illustrated. We quote the following interesting portions:

"Ignorance and credulous hope make the market for most proprietary remedies. Intelligent people are not given largely to the use of the glaringly advertised cure-alls, such as Liquozone or Peruna. Nostrums there are, however, which reach the thinking classes as well as the readily gulled. Depending, as they do, for their success upon the lure of some subtle drug concealed under a trademark name, or some opiate not readily obtainable under its own label, these are the most dangerous of all quack medicines, not only in their immediate effect, but because they create enslaving appetites, sometimes obscure and difficult of treatment, most often tragically obvious. Of these concealed drugs the headache powders are the most widely used, and of the headache powders Orangeine is the most conspicuous.

Orangeine.

"Orangeine prints its formula. It is, therefore, its proprietors claim, not a secret remedy. But to all intents and purposes it *is* secret, because to the uninformed public the vitally important word 'acetanilid' in the formula means little or nothing. Worse than its secrecy is its policy of careful and dangerous deception. Orangeine, like practically all the headache powders, is simply a mixture of acetanilid with less potent drugs. Of course, there is no orange in it, except the orange hue of the boxes and wrappers which is its advertising symbol. But this is an unimportant deception. The wickedness of the fraud lies in this: That whereas the nostrum, by virtue of its acetanilid content, thins the blood, depresses the heart, and finally undermines the whole system, it claims *to strengthen the heart and to produce better blood.* Thus far in the patent medicine field I have not encountered so direct and specific an inversion of the true facts.

"Last July an 18-year-old Philadelphia girl got a box of Orangeine powders at a drug store, having been told that they would cure headache. There was nothing on the label or in the printed matter inclosed with the preparation warning her of the dangerous character of the nostrum. Following the printed advice, she took two powders. In three hours she was dead. Coroner Dugan's verdict follows:

"'Mary A. Bispels came to her death from kidney and heart disease, aggravated by poisoning by acetanilid taken in Orangeine headache powders.'

Prescribing Without Authority.

"Yet this poison is being recommended every day by people who know nothing of it and nothing of the susceptibility of the friends to whom they advocate it. For example, here is a testimonial from the Orangeine booklet:

"'Miss A. A. Phillips, 66 Powers street, Brooklyn, writes: "I always keep Orangeine in my desk at school, and through its frequent applications to the sick I am called both 'doctor and magician.'"'

"If the school herein referred to is a public school, the matter is one for the Board of Education; if a private school, for the Health Department or the County Medical Society. That a school teacher should be allowed to continue giving, however well-meaning her foolhardiness may be, a harmful and possibly fatal dose to the children intrusted to her care, seems rather a significant commentary on the quality of watchfulness in certain institutions.

"Obscurity as to the real nature of the drug, fostered by careful deception, is the safeguard of the acetanilid vender. Were its perilous quality known, the headache powder would hardly be so widely used. And were the even more important fact that the use of these powders becomes a habit, akin to the opium or cocain habits, understood by the public, the repeated sales which are the basis of Orangeine's prosperity would undoubtedly be greatly cut down. Orangeine fulfills the prime requisite of a patent medicine in being a good 'repeater.' Did it not foster its own demand in the form of a persistent craving, it would hardly be profitable. Its advertising invites to the formation of an addiction to the drug. 'Get the habit,' it might logically advertise, in imitation of a certain prominent exploitation along legitimate lines. Not only is its value as a cure for nervousness and headaches insisted on, but its prospective dupes are advised to take this powerful drug as a *bracer.* . . .

"Where I have found a renegade physician making his millions out of Peruna, or a professional promoter trading in the charlatanry of Liquozone, it has seemed superfluous to comment on the personality of the men. They are what their business connotes. With Orangeine the case is somewhat different. Its proprietors are men of standing in other and reputable spheres of activity. Charles L. Bartlett, its president, is a graduate of Yale University and a man of some prominence in its alumni affairs. Orangeine is a side issue with him. Professionally he is the Western representative of Ivory Soap, one of the heaviest of legitimate advertisers, and he doubtless learned from this the value of skillful exploitation. Next to Mr. Bartlett, the largest owner of stock (unless he has recently sold out) is William Gillette, the actor, whose enthusiastic indorsement of the powders is known in a personal sense to the profession which he follows, and in print to hundreds of thousands of theater-goers who have read it in their programs. Whatever these gentlemen may think of their product (and I understand that, incredible as it may seem, both of them are constant users of it), the methods by which it is sold, and the essential and mendacious concealment of its real nature, illustrate the level to which otherwise upright and decent men are brought by a business which can not profitably include either uprightness or decency in its methods.

"Orangeine is less dangerous, except in extent of use, than many other acetanilid mixtures which are much the same thing under a different name. A friend of mine with a weak heart took the printed dose of Laxative Bromo Quinin and lay at the point of death for a week. . . .

Dangers of Antikamnia.

"In the 'ethical' field the harm done by this class of proprietaries is perhaps as great as in the open field, for many of those which are supposed to be sold only in prescriptions are as freely distributed to the laity as Peruna. And their advertising is hardly different.

"Antikamnia, claiming to be an 'ethical' remedy, and advertising through the medical press by methods that would, with little alteration, fit any patent pain-killer on the market, is no less dangerous or fraudulent than the Orangeine class which it almost exactly parallels in composition. It was at first exploited as a 'new synthetical coal-tar derivative,' which it isn't and never was. It is simply half or more acetanilid (some analyses show as high as 68 per cent.) with other unimportant ingredients in varying proportions. In a

booklet entitled 'Light on Pain,' and distributed on doorsteps, I find under an alphabetical list of diseases this invitation to form the Antikamnia habit:

"'Nervousness (overwork and excesses)—Dose: One Antikamnia tablet every two or three hours.

"'Shoppers' or Sightseers' Headache—Dose: Two Antikamnia tablets every three hours.

"'Worry (nervousness: "the blues")—Dose: One or two Antikamnia and Codein tablets every three hours.'

"Codein is obtained from opium. The codein habit is well known to all institutions which treat drug addictions, and is recognized as being no less difficult to cure than the morphin habit.

"A typical instance of what Antikamnia will do for its users is that of a Pennsylvania merchant, 50 years old, who had declined, without apparent cause, from 140 to 116 pounds, and was finally brought to Philadelphia in a state of stupor. His pulse was barely perceptible, his skin dusky and his blood of a deep chocolate color. On reviving he was questioned as to whether he had been taking headache powders. He had, for several years. What kind? Antikamnia; sometimes in the plain tablets, at other times Antikamnia with codein. How many? About twelve a day. He was greatly surprised to learn that this habit was responsible for his condition.

"'My doctor gave it to me for insomnia,' he said, and it appeared that the patient had never even been warned of the dangerous character of the drug.

"Were it obtainable I would print here the full name and address of that attending physician, as one unfit, either through ignorance or carelessness, to practice his profession. And there would be other physicians all over the country who would, under that description, suffer the same indictment within their own minds for starting innocent patients on a destructive and sometimes fatal course. For it is the careless or conscienceless physician who gets the customer for the 'ethical' headache remedies, and the customer, once secured, pays a profit, very literally, with his own blood. Once having taken Antikamnia, the layman, unless informed as to its true nature, will often return to the drug store and purchase it, with the impression that it is a specific drug, like quinin or potassium chlorate, instead of a disguised poison, exploited and sold under patent rights by a private concern. The United States postoffice, in its broad tolerance, permits the Antikamnia company to send through the mails little sample boxes containing tablets enough to kill an ordinary man, and these samples are sent not only to physicians, as is the rule with ethical remedies, but to lawyers, business men, 'brain workers' and other prospective purchasing classes. The box bears the lying statements: 'No drug habit—no heart effect.'

"Just as this is going to press the following significant case comes in from Iowa:

"'FARMINGTON, IOWA, October 6.—(Special to the *Constitution-Democrat.*) Mrs. Hattie Kick, one of the best and most prominent ladies of Farmington, died rather suddenly Wednesday morning at 10 o'clock from an overdose of Antikamnia, which she took for a severe headache from which she was suffering. Mrs. Kick was subject to severe headaches and was a frequent user of Antikamnia, her favorite remedy for this ailment.'

"There is but one safeguard in the use of these remedies: to regard them as one would regard opium and to employ them only with the consent of a physician who understands their true nature. Acetanilid has its uses, but not as a generic painkiller. Pain is a symptom; you can drug it away temporarily, but it will return, clamoring for more payment until the final price is hopeless enslavement. Were the skull and bones on every box of this class of poison the danger would be greatly minimized.

"With opium and cocain the case is different. The very words are danger signals. Legal restrictions safeguard the public, to a greater or less degree, from their indiscriminate use. Normal people do not knowingly take opium, or its derivatives, except with the sanction of a physician, and there is even spreading abroad a belief (surely an expression of the primal law of self-preservation) that the licensed practitioner leans too readily toward the convenient narcotics.

"But this perilous stuff is the ideal basis for a patent medicine, because its results are immediate (though never permanent), and it is its own best advertisement in that one dose imperatively calls for another. Therefore it behooves the manufacturer of opiates to disguise the use of the drug. This he does in various forms, and he has found his greatest success in the 'cough and consumption cures' and the soothing syrup class. The former of these will be considered in another article. As to the 'soothing syrups,' designed for the drugging of helpless infants, even the trade does not know how many have risen, made their base profit and subsided. A few survive, probably less harmful than the abandoned ones, on the average, so that by taking the conspicuous survivors as a type I am at least doing no injustice to the class. . . .

"Making cocain fiends is another profitable enterprise. Catarrh powders are the medium. A decent druggist will not sell cocain as such, steadily, to any customer, except upon prescription, but most druggists find salve for their consciences in the fact that the subtle and terrible drug is in the form of somebody's sure cure. There is need to say nothing of the effects of cocain, other than that it is destructive to mind and body alike, and appalling in its breaking down of all moral restraint. Yet in New York City it is distributed in 'samples' at ferries and railway stations. You may see the empty boxes and the instructive labels littering the gutters of Broadway any Saturday night, when the drug store trade is briskest.

"Birney's Catarrhal Powder, Dr. Cloe's Catarrh Cure, Dr. Gray's Catarrh Powder and Crown Catarrh Powder are the ones most in demand. All of them are cocain; the other ingredients are unimportant—perhaps even superfluous.

"Whether or not the bottles are labeled with the amount of cocain makes little difference. The habitués know. In one respect, however, the labels help them by giving information as to which nostrum is the most heavily drugged.

"'People come in here,' a New York City druggist tells me, 'ask what catarrh powders we've got, read the labels and pick out the one that's got the most cocain. When I see a customer comparing labels I know she's a fiend.'

"Naturally these owners and exploiters of these mixtures claim that the small amount of cocain contained is harmless. For instance, the 'Crown Cure,' admitting 2½ per cent., says:

"'Of course, this is a very small and harmless amount. Cocain is now considered to be the most valuable addition to modern medicine. . . . It is the most perfect relief known.'

"Birney's Catarrh Cure runs as high as 4 per cent., and can produce testimonials vouching for its harmlessness."

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of November, 1905:

ALABAMA.

Hale, R. E., Bellamy.
Sims, A. G., Renfroe.

ARIZONA.

Dameron, L. D., Phoenix.
Fales, W. H., Clifton.

ARKANSAS.

Daniel, S. G., Marshall.
Davis, J. H., Falcon.
Jackson, N. H., Pontoon.
Winegar, E. F., Hot Springs.

CALIFORNIA.

Artiques, J. E., San Francisco.
Fairchild, F. R., San Francisco.
Gross, L., San Francisco.
Weddle, C., Dinuba.
White, J. L., Sacramento.
Yerxa, C. W., Los Angeles.

COLORADO.

Moore, W. M., La Junta.
Pearrs, J. E., Pueblo.
St. Clair, R., Cripple Creek.

CONNECTICUT.

Barrows, B. S., Hartford.
Buel, J. L., Litchfield.
Bunce, P. D., Hartford.
Gompertz, L. M., New Haven.
Graves, C. B., New London.
Huntington, S. H., Norwalk.
Jones, L. P., Greenwich.
Judson, W., New Haven.
Klein, A. W., Greenwich.
Leverty, C. J., Bridgeport.
Murphy, M. D., Middletown.
Nettleton, I. L., Bridgeport.
Pomeroy, N. A., Waterbury.
Robbins, G. O., Waterbury.
Ryan, P. J., Hartford.
Sherer, H. C., South Norwalk.
Tenney, A. J., Branford.
Winchell, A. E., New Haven.

DISTRICT OF COLUMBIA.

Keyser, C. S., Washington.
Ransdell, R. C., Washington.

FLORIDA.

Finlay, D. H., Pine Barren.
Fitts, T. B., West Tampa.
Freeman, J. V., Jacksonville.
Hutchings, G., Eustis.
Lowry, R. A., Brooksville.
Thomason, F. G., Kissimmee.

GEORGIA.

Phillips, F. H., Harlem.

IDAHO.

Plumer, J. J., Halley.
Sears, C. E., Wallace.

ILLINOIS.

Arnold, W. J., Chicago.
Avery, W. M., Compton.
Brinckerhoff, C. E., Chicago.
Blackstone, G. R., Table Grove.
Bell, W. H., Decatur.
Cates, E. M., Wayne City.
Clark, E. E., Danville.
DeBoer, H., Chicago.
Dinsmore, V., Jacksonville.
Duncan, W. P., Jacksonville.
Feltmann, A. W., Chicago.
Francis, C. H., Chicago.
Flint, O. J., Princeton.
Fry, C. B., Mattoon.
Garraghan, E. F., Chicago.
Glenn, J. A., Ashland.
Glenn, F. L., Chicago.
Hemmi, S. A., Chicago.
Hilliard, D. A., Jeffersonville.
Jones, T. A., Ridgway.
Kern, N. H., Thawville.
Kirk, J. W., Oblong.
Lyles, A. R., Virginia.
Martin, L., Chicago.
Morrill, C. M., Havana.
Perkins, T. L., Springfield.
Sale, L. O., Fisher.
Sims, S. N., Danville.
Tucker, H. S., Chicago.
Thornton, W. T., Chicago.
Way, J. P., Chicago.
Wild, T., Chicago.

INDIANA.

Clapper, M. M., Hartford City.
Cummins, S. M., Elkhart.
Greene, J. B., Mishawaka.
Hunt, L. F., Anderson.
Johnson, L., Bourbon.
Kistner, J. W., Elkhart.
Letherman, A. P., Valparaiso.
Rennoe, C. A., South Bend.
Robinson, C. C., Indiana Harbor.

IOWA.

Coleman, F. J., Everly.
Sargeant, F. L., Marion.
Wiley, E. D., Des Moines.

KANSAS.

Chaffee, S. N., Talmage.
Dewees, W. B., Salina.
Engberg, A., McPherson.
Klingberg, W. A., Elmo.
Maggard, D. I., Wichita.
Richardson, E. F., Onaga.
Reser, S. P., Hartford.
Stewart, R., Powhattan.
Toncannon, T. F., Emporia.
Tower, J. B., Topeka.
Way, F. E., Concordia.

KENTUCKY.

Estill, R. J., Lexington.
Jones, G. R., Franklin.
Reynolds, O. H., Frankfort.

MARYLAND.

Bressler, F. C., Baltimore.
Haddox, H. B., Gaithersburg.
Hodgdon, A. L., Pearson.
Johnson, J. T., Cumberland.
Lewis, H. D., Baltimore.
Requardt, W. W., Baltimore.

MASSACHUSETTS.

Bates, E. A., Springfield.
Blake, C. J., Boston.
Bragg, F. A., Foxboro.
Canedy, F. J., Shelburne Falls.
Clark, G. O., Boston.
Dacey, C. J., Brockton.
Duryee, A. P., Brockton.
Fox, W. Y., Taunton.
Folson, C. F., Boston.
Flynn, J. L., Cambridge.
Goodall, H. W., Boston.
Goldthwaite, S. V., Boston.
Green, C. M., Boston.
Hawes, J. B. 2d, Boston.
Hooker, S. V., Boston.
Hill, T. C., Boston.
Jones, W. W., Housatonic.
Jack, F. L., Boston.
Knickerbocker, P. G., Brookline.
Kilroy, P. D., Springfield.
Kennard, H. D., Peabody.
Miller, C. H., Boston.
Mandell, A. H., New Bedford.
Miles, G. A., Somerville.
McCarthy, C. D., Malden.
Moline, C., Sunderland.
Potter, A. C., Boston.
Powers, G. H., Jr., Boston.
Peebles, T. C., Falmouth.
Putnam, C. P., Boston.
Rowe, G. J. M., Boston.
Shattuck, G. B., Boston.
Sears, H. E., Beverly.
Stevens, H. B., West Roxbury.
Stickney, E. P., Arlington.
Thompson, G. E., Boston.
Treanor, J. P., Boston.
Twitchell, G. P., Greenfield.
Webster, G. A., Boston.
Wood, H. W., Fairhaven.
Wolcott, G., Boston.
Whitney, C. M., Boston.

MICHIGAN.

Arscott, W. W., Rogers City.
Chapman, V. A., Muskegon.
Northrup, W., Grand Rapids.
Potter, G. E., Detroit.
Safford, H. E., Detroit.
Smith, C. F., Whitehall.
Worden, A. L., Detroit.

MINNESOTA.

Golseth, G., Henning.
Jones, S. S., Frazee.
Roberts, L. M., Little Falls.
Vigen, J. G., Fergus Falls.

MISSISSIPPI.

Landreth, J. J., Air Mount.

MISSOURI.

Addington, W. H., Spickard.
Brookes, H. S., St. Louis.
Benway, W. H., Deepwater.
Carson, W., Shelbyville.
Cook, F. L., Blue Springs.
Cox, L., Springfield.
Eastman, F. C., Winston.
Falk, J. C., St. Louis.
Fisher, A. T., Maryville.
Herchenroeder, L. C., St. Louis.
Higdon, E. E., Allenville.
Holtgrewe, F. W., St. Louis.
Hoge, M. W., St. Louis.
La Rue, H., Dexter.
Lemon, F. F., Lincoln.
Moore, B. W., St. Louis.
Muetze, H., St. Louis.
Pickerill, C. W., Kansas City.
Robertson, J. A., Kansas City.
Russell, J. J., Deepwater.
Summa, H. H., St. Louis.
Taylor, A. M., Elsberry.
Terrill, J. O., Vandalia.
Vonderau, O. L., St. Louis.
Wolfner, H. L., St. Louis.

MONTANA.

Horst, C. H., Warm Springs.
Saunders, E. H., Chestnut.
Scanland, J. M., Butte.
Southmayd, L., Great Falls.

NEBRASKA.

Deffenbaugh, M. H., Norman.
Jones, S. J., Minden.
Metzinger, J. J., Fremont.
McLeod, J. M., Lincoln.
Platt, O. D., Cook.
Sutton, I. C., Bancroft.
Williams, J. P., Lincoln.

NEW HAMPSHIRE.

Downing, A. T., Littleton.
Holbrook, H. C., Penacook.
Kenniston, W. B., Exeter.
Lathrop, M. C., Dover.
Pitman, A. J., Candia.
Worthen, E. M., Ashland.

NEW JERSEY.

Borgmeyer, J. G. L., Bayonne.
Fisher, C. R. P., Bound Brook.
Gray, T. N., East Orange.
Madden, T. W., Collingswood.
Neer, R., Paterson.
Townsend, M. E., Atlantic City.
Vinton, M. M., East Orange.

NEW YORK.

Fletcher, E. A., Buffalo.
Grausman, P. M., New York.
Hurd, L. M., New York.
Le Breton, P., Buffalo.
Narey, W. J., New York.

NORTH DAKOTA.

Love, R. H., Thompson.
Van de Erve, W., Pingree.
Walker, J. J., Cavalier.

OHIO.

Anderson, H. B., Newark.
Bauman, G. I., Cleveland.
Bode, M. J., Cincinnati.
Bryson, W. S., Mingo Junction.
Chenoweth, O. E., Lima.
Donley, J., Columbus.
Heath, J. M. S., Bellaire.
Hannum, E. A., Cleveland.
Hiddleson, C. S., Akron.
Marshall, F. M., Coshocton.
McCurdy, L. C., Coshocton.
Medlin, W. A., Cleveland.
Marsh, H. H., Halltown.
Moore, J. W., Carlisle.
Richards, T. J. W., New Philadelphia.
Shrieves, E., Wilmington.
Stedem, J. P. H., Newark.
Walker, C. S., Cleveland.
Ward, C. E., Cleveland.

OKLAHOMA.

Brown, H. C., Okarche.
Dodson, S. D., Maud.
Dodson, T. J., Mangum.
Ebright, E. D., Carmen.
Kuntz, L., Canute.
Larson, T. H., Cushing.
Miller, J. P., Cheyenne.
Omer, W. J., Thomas.
Sanders, P. L., Carnegie.
Woodard, W. G., Snyder.

OREGON.

Lamberson, J. A., Lebanon.
Seely, A. C., Roseburg.

PENNSYLVANIA.

Allen, F. B., North Wales.
Atkins, J. G., Red Lion.
Bowyer, M. A., Philadelphia.
Blackburn, I. E., Greensburg.
Brock, R. E., Waynesburg.
Brown, J. J., Bloomsburg.
Barton, E., Scranton.
Bowman, J. H., Berwick.
Brunner, F. R., Eshbach.
Cohen, M. Solis-, Philadelphia.
Colborn, A. J., Connellsville.
Crawford, J. S., Ingram.
Despart, D. L., Philadelphia.
Gamble, R. B., Meadville.
Gorham, F. C., Condersport.
Hill, A. H., Ramey.
Ickes, G. A., Altoona.
Johnson, T. B., Jr., Towanda.
Kurtz, W. J., Howard.
Krajewski, F. J., Nanticoke.
Marlatt, M. O., Sewickley.
Martin, J. M., Grove City.
Montgomery, C. M., Philadelphia.
Peterson, A. A., Elizabeth.
Schoff, C. H., Media.
Sinkler, F. W., Philadelphia.
Stevens, J. C., Harrisburg.
Sharpe, A. H., Philadelphia.
Smith, L. B. R., Jeanette.
Thomas, G. D., Chicora.
Van Doren, W., Archbald.
Weidemann, F. H., Morrisdale Mines.
Wagenseller, B. F., Selinsgrove.
Woodside, H. A., Lumber City.

PHILIPPINE ISLANDS.

Patterson, E. W., Mandanao.

RHODE ISLAND.

Calef, F. T., E. Providence.
Knapp, H. J., Newport.
Larrabee, F. W., Block Island.
Phillips, F. G., Providence.
Rose, A. D., Providence.
Sherman, W. A., Newport.

SOUTH CAROLINA.

Neuffer, G. A., Abbeville.
Wyman, H. H., Aiken.

SOUTH DAKOTA.

Groesbeck, S. V., Spearfish.
Silberstein, J., Crow Creek.

TENNESSEE.

Adkisson, J. E., Medina.
Bridger, J. D., Memphis.
Davis, C. H., Knoxville.
Fancher, H. L., Orme.
Gaines, J. A., Nashville.
Hill, W. W., Cardiff.
Kittrell, W. H., Mt. Pleasant.
Snodgrass, J. H., Sparta.
Timmons, E. A., Columbia.
Young, B. F., Knoxville.

TEXAS.

Barnes, L. M., Thorndale.
Denson, J. L., Cameron.
Forrest, B. F., Eagle Lake.
Gorden, R. A., Lorena.
Mathis, E. G., Manor.
Ramsel, P. A., Thorndale.
Southern, G. W., Lincoln.
Thayer, A. E., Galveston.
Walker, R. N., Celina.

VERMONT.

Ball, C. F., Rutland.
Brewster, J. D., Windsor.
Carver, H. S., Marshfield.
Green, L. M., Bethel.
Ladd, H. A., Essex.
Lape, R., Fairhaven.
McGuire, M. F., Montpelier.

VIRGINIA.

Alsop, J. F., Prospect.
Dunn, W. L., Glade Spring.
Edmonson, H. B., Bristol
Jarratt, T. F., Phoebus.
Jones, C. C., Arbor Hill.
Levy, E. C., Richmond.
Morgan, L. D., Longdale.
Rucker, H. C., Horton Summit.

WASHINGTON.

Horsfall, F. L., Seattle.

WEST VIRGINIA.

Armbrecht, E. L., Wheeling.
Graves, G. B., Coalwood.

WISCONSIN.

Blumenthal, R. W., Oconomowoc.
Johnson, H. B., Tomah.
Lld, T. A., Marinette.
Robinson, H. A., Kenosha.

Marriages

S. A. SAVITZ, M.D., to Miss Sallie Ost, both of Philadelphia, recently.

SCOTT T. PETRIE, M.D., to Mrs. Mathilda Good, both of Chicago, September.

C. EDMUND LERCH, M.D., Bernville, Pa., to Miss Jennie Wagner of Robesonia, Pa.

RICHARD W. DAKE, M.D., to Miss Julia Dudley, both of Nashville, Tenn., November 21.

FOSTER SUDLER, M.D., to Miss Elsie L. George, both of Sudlerville, Md., November 29.

CLAUDE B. CROSS, M.D., to Miss Bessie A. Taylor, both of Mineral, Kan., November 22.

FRANCIS J. WILSON, M.D., to Miss Anna May Regan, both of Milwaukee, Wis., November 22.

SOL WEIR NEWMAYER, M.D., to Miss Rietta Ulman Hirsh, both of Philadelphia, November 30.

ORVILLE EVERETTE BEEBE, M.D., to Miss Mary Edna Wright of Bellingham, Wash., November 29.

CHARLES E. GLYNN, M.D., Davenport, Iowa, to Miss Blanche Langan of Clinton, Iowa, November 22.

ANTHONY J. SCHMIT, M.D., Beloit, Wis., to Miss Elsie M. Winkley of Clinton, Wis., November 22.

LEWIS F. ZACHARY, M.D., Byrdstown, Tenn., to Miss Laura Kimes of Monterey, Tenn., November 21.

THOMAS MEARES GREEN, M.D., to Miss Emma Perrin West, both of Wilmington, N. C., November 16.

JOHN C. BEAUCHAMP, M.D., Williamson, Ga., to Mrs. Virginia Kenney of Concord, Ga., November 29.

HIRAM L. THROGMORTON, M.D., Pocahontas, Ark., to Miss Vida Butler of Grapevine, Ark., November 18.

RALEIGH A. BUCKMASTER, M.D., Brandon, Iowa, to Miss Grace A. Jeffers of Cedar Falls, Iowa, November 30.

HARRY GIBBONS UTLEY, M.D., Apex, N. C., to Miss Florence Jennings Percival, at Baltimore, November 25.

PHILEMON SMITH LANSDALE, M.D., Damascus, Md., to Miss Annie Pyle, at Charlottesville, Va., November 29.

WALLER JAMESON, M.D., Roanoke, Va., to Miss Frances Virginia Chalmers, at Lynchburg, Va., November 29.

EDWARD THOMAS ANDERSON, M.D., Platte, S. D., to Miss Julia Edith Orvis of Dubuque, Iowa, November 28.

GEORGE BOARDMAN EDWARDS, M.D., Darlington, S. C., to Miss Marie A. McCullough, at Nashville, Tenn., November 29.

CHRISTIAN AUGUSTUS DANNAKER, M.D., Kansas City, Mo., to Miss Mary Beckett Moss of Pawnee City, Neb., November 30.

SAMUEL J. GARDNER, M.D., San Francisco, Cal., to Miss Elizabeth Smith of Sterling, Scotland, at San Francisco, December 6.

Deaths

Edward A. Cobleigh, M.D. Atlanta (Ga.) Medical College, 1872; A.M., LL.D.; one of the founders and dean of the Chattanooga Medical College (Medical Department of Grant University), Chattanooga; professor of the principles and practice of medicine, dermatology and clinical medicine, and lecturer on physical diagnosis at the same institution since 1889; chief of staff at Erlanger Hospital, Chattanooga; member of the Chattanooga and Hamilton County Medical Society, Tennessee State Medical Association, Tri-state Medical Society of Alabama, Georgia and Tennessee, American Public Health Association and American Medical Association; for nine years physician of McMinn County, Tenn.; for one year secretary of the Chattanooga Board of Health, and for four years member of the local board of pension examiners, died at Erlanger Hospital, Chattanooga, November 29, after a short illness, from a complication of diseases. He had practiced in Chattanooga since 1887, and made a success by indefatigable study, untiring activity and a natural adaptability for his vocation. Resolutions of respect were adopted by the faculty of the Chattanooga Medical College, the student classes of the college and the Chattanooga and Hamilton County Medical Society.

Ambrose Loomis Ranney, M.D. New York University, New York City, 1870; a member of the New York County Medical Society, Neurological Society of New York, and once president of the New York Academy of Medicine; formerly adjunct professor of anatomy, New York University, New York City, and professor of nervous and mental diseases in the University of Vermont Medical Department, Burlington; author of "Essentials of Anatomy," "Applied Anatomy of the Nervous System," "Treatise on Surgical Diagnosis," "Practical Medical Anatomy," and many smaller contributions to the medical literature, died suddenly in New York City, December 1, from heart disease, aged 57.

John B. Sterley, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1857; a member of the American Medical Association; surgeon of the One Hundred and Sixty-seventh Pennsylvania Volunteer Infantry, and later district examining surgeon, during the Civil War; a member of the state, county and local medical societies; one of the best-known physicians of Reading, Pa., died at his home in that city, from septicemia due to a carbuncle, after an illness of six months, November 24, aged 69.

William H. Bartran, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1865; a veteran of the Civil War; formerly mayor and superintendent of schools of Fort Howard, Wis.; member of the legislature in 1873 and 1874; physician of Brown County and Green Bay for twelve years; a charter member of Brown County Medical Society, died at his home in Green Bay, November 22, from paralysis, after a long illness, aged 67.

J. Ernest Meiere, M.D. New York University, New York City, 1869; contract surgeon United States Army at the outbreak of the Civil War, but thereafter a surgeon in the Confederate service; appointed consul to Amoy, China, in 1886; city physician of Leadville, Colo., in 1879 and 1880; some-time president of the Lake County (Colo.) and Cripple Creek Medical societies, died at his home in Cripple Creek, December 1, from pneumonia, aged 75.

James N. Reece, M.D. Rush Medical College, Chicago, 1888; in 1898 representative from St. Joseph County in the legislature; local surgeon of the Wabash Railroad; for many years president of the board of education of North Liberty, Ind., died at his home in that place, November 18, after a prolonged illness, from tuberculosis of the bones, aged 49.

Benjamin Myers, M.D. Jefferson Medical College, Philadelphia, 1869; representative in the Ohio legislature from Ashland County from 1874 to 1877; twice probate judge of Ashland County; once mayor of Ashland; a veteran of the Civil War, died from pneumonia at his home in Ashland, November 21, after an illness of a few days, aged 67.

James A. Smeallie, M.D. Albany (N. Y.) Medical College, 1879; formerly of Duluth, Minn.; a member of the Minnesota State Medical Society, Inter-urban Academy of Medicine and St. Louis County Medical Society, died at his home in Cass Lake, Minn., November 25, from tuberculosis, after a long illness.

Joseph Warren Hayward, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1864; surgeon in the federal service during the Civil War, and later surgeon of the Third Infantry, M. V. M., died at his home in Taunton, Mass., November 21, after a lingering illness, aged 64.

Frank Weeks Blair, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1899, of Farmingham N. H.; physician of Strafford County, died at the Cottage Hospital, Portsmouth, N. H., from carcinoma of the stomach, after a long illness, aged 31.

John Samuel Angle, M.D. Jefferson Medical College, Philadelphia, 1862; a surgeon during the Civil War, and for many years local surgeon of the Pennsylvania System, died at his home in Strafford, Pa., November 15, after a prolonged illness, aged 64.

Edmund Bennett, M.D. Jefferson Medical College, Philadelphia, 1855; a member of the Ocean County board of freeholders since 1878, and for many years a director of the board, died at his home in Barnegat, N. J., November 23, from heart disease.

Charles H. Jacobs, M.D. Medical Department of Adelbert College of Western Reserve University, Cleveland, 1883, of Youngsville, Pa., died November 24 at the Emergency Hospital, Warren, Pa., a day after an operation for appendicitis, aged 49.

Joseph B. Davis, M.D. Missouri Medical College, St. Louis, 1883; of Marshall, Mo.,; a member of the Saline County Medical Society, died from nephritis at Excelsior Springs, Mo., November 24, after a long illness, aged 62.

Martha A. Anderson, M.D. College of Physicians and Surgeons, Boston, 1887; formerly a missionary in India, and then a practitioner of Boston and Philadelphia, died at her home in Shelburne, Mass., November 23, aged 62.

Frank H. Hopkins, M.D. Harvard University Medical School, Boston, 1903, of South Boston, Mass., died at Antrim, N. H., November 17, after a long illness, from typhoid fever complicated with pneumonia.

B. H. Lemon, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1885; coroner for the counties of Lincoln and Welland, Ont., was found dead in bed at his home in Thorold, November 28.

Thomas B. Robison, M.D. Medical College of Ohio, Cincinnati, 1891, formerly of Rossville, Ind., died from tuberculosis at Denver, Colo., November 19, after an illness of several years, aged 38.

Salmon B. Sayre, M.D. University of Wooster Medical Department, Cleveland, 1890, died suddenly in his office at Oelwein, Iowa, November 27, from heart disease, aged 36.

Calvin J. Sharp, M.D. San Francisco, 1889, of Rockford, Iowa, died in the Cherokee State Hospital from cerebral hemorrhage, November 14, after an illness of two months, aged 46.

Asabel G. Hopkins, M.D. Cincinnati, 1877, a veteran of the Civil War, died at his home in Muskegon, Mich., November 22, after a lingering illness, from senile debility, aged 86.

Thomas H. Butler, M.D. Hospital College of Medicine, Louisville, 1898, of Monticello, Miss., was shot and instantly killed in his office by Mrs. Jame F. Birdsong, November 25.

Alphonse Gladu, M.D. University of the Victoria College, Coburg, Ont., 1867, died suddenly at his home in Lafayette, La., November 20, from cerebral hemorrhage, aged 60.

George O. Caldwell, M.D. New York University, New York City, 1886, of Scranton, Pa., died suddenly in the railway station at Manchester, N. H., November 18, aged 45.

Charles H. Barbour, M.D. University of Vermont Medical Department, Burlington, 1874, died at his home in North Clarendon, Rutland County, Vt., November 21, aged 56.

Kate L. S. Sterling, M.D. Women's Medical College, Philadelphia, 1886, a member of the New York County Medical Society, died at New York Hospital, December 1.

William S. Cardwell, M.D. University of Nashville (Tenn.) Medical Department, 1859, died at his home in Prospect, Tenn., November 26, after an illness of two weeks.

William M. Gwynn, M.D. Pennsylvania, 1868, died at his home in Auburn, N. Y., November 21, from pneumonia, after an illness of four days, aged 71.

John William Green, M.D. Rush Medical College, Chicago, 1889, died at his home in Lacey, Iowa, November 21, from uremia, after a short illness.

Milton Welsh Warfield, M.D. Jefferson Medical College, Philadelphia, 1850, died at his home near Lisbon, Howard County, Md., November 26, aged 78.

Albert Philips Hallowell, M.D. Pennsylvania, 1900, died suddenly at his home in Ashbourne, Pa., from heart disease, November 26, aged 28.

Thomas B. Tandy, M.D. Louisville (Ky.) Medical College, 1876, died at his home in Winfield, Kan., November 24, from nephritis.

J. T. **Bennett, M.D.** 1855, died at his home in Brookville, Pa., November 15, from dropsy, after an illness of two years, aged 83.

Emma DeL. Burd, M.D. New Jersey, 1889, died at her home in Yonkers, N. Y., November 22, after a short illness, aged 61.

Bennett **Downes, M.D.** Jefferson Medical College, Philadelphia, 1873, died at his home in Frederica, Del., November 25.

Levi **Wood, M.D.** Albany (N. Y.) Medical College, 1865, died at his home in Ephratah, N. Y., November 28, aged 62.

George **H. Gilson, M.D.** St. Louis Medical College, 1876, died at his home in Raymond, Ill., November 17, aged 58.

Queries and Minor Notes

HAS TETANUS FOLLOWED QUININ OR MORPHIN HYPODERMICS?

DR. E. F. MCCAMPBELL, Madison, Wis., desires to know if any practitioner knows of a case of tetanus resulting from the hypodermic injection of either quinin or morphin under supposedly aseptic precautions.

CONFIDENTIAL CORRESPONDENCE.

A correspondent has sent us the letter which we reproduce below, which was received at the institution with which he is connected—a reputable sanitarium. It illustrates the methods used by certain unscrupulous individuals and firms handling patent medicines and who advertise that "all correspondence is strictly confidential":

"*Dear Sir*: I have about 1,500 names of users of morphin, cocain, opium, etc., and they are all names taken from letters of inquiries and are all *bona fide* and of recent compilation.

If you can use these names at one cent a name, I would be glad to take the matter up with you.

Thanking you in advance for an answer, I am, ———."

CONTRACT PRACTICE.

DALLAS, TEXAS, Nov. 17, 1905.

To the Editor:—Kindly inform me through THE JOURNAL: 1. If it is unethical to belong to a medical club which does the medical practice of its members for stipulated monthly or weekly fees. 2. Whether it is unethical to make visits to members of the club for less than the regular fees, if the physician making the visits does not belong to the club and if the visits are made to poor people who are unable to pay regular fees. A. D. FERGUSON, M.D.

ANSWER.—The general principles underlying club practice have frequently been discussed in THE JOURNAL. As a general proposition the profession views club practice as inimical to its best interests, and ultimately unsatisfactory to the public. In particular instances like the one submitted above it is entirely within the province of the local society to decide whether the special proposition is or is not compatible with ethical standards, and subservient to the interest of layman and physician. If possible the full facts should be presented to the society, for its action thereon in any event will determine whether a member may serve the club and also remain in good standing.

The second query involves several different points so that no one answer can be given. Fees should not be cut, except for the poor. For an outside physician to attempt to underbid the club fees in order to get some of the work is unwise, though, perhaps, not flagrantly unethical. That is not the way to meet the evils of club practice. This second problem also should be thoroughly thrashed out in the society. Get every educated reputable physician into the society and agree on fundamental points and then exterminate the quacks.

FOURTH DISEASE.

MINDEN, NEB., Nov. 21, 1905.

To the Editor:—I would like to know through THE JOURNAL the latest ideas concerning "Filatow-Dukesche Krankheit," or fourth disease in regard to its relation to scarlet fever, also where I can obtain the latest and most authoritative works on the subject.

J. R. MCKIRAHAN.

ANSWER.—"Fourth disease" is the name given by Clement Dukes to a series of cases described by him in the *Lancet*, 1900, vol. ii, 1889, cases which resembled in their clinical manifestations either rubella or scarlet fever. A similar set of cases was described by Filatow in 1885, hence the name sometimes applied to this clinical picture, "Filatow-Dukesche Krankheit." The weight of opinion, however, seems to be that the clinical picture described by these writers does not constitute a disease *sui generis*, but that the cases described are either rubella or mild scarlet fever. The verdict seems to be "not proven." A recent discussion of the subject appeared in *La Semaine Médicale*, March 29, 1905, by Cheinisse, in which the literature is also reviewed. The following authors also have written on the subject: Griffith: *Phila. Med. Journal*, 1902, vol. ix, p. 659. Ker: *Practitioner*, 1902, vol. lxviii, p. 139. Dillingham: *American Medicine*, 1903, vol. vi, p. 263. von Bokay: *Deutsch. med. Wochft.*, Oct. 20, 1904. Shaw: *American Jour. Med. Sciences*, January, 1905. Filatow's book on pediatrics is published by the Cleveland Press, 346 Ogden Ave., Chicago. The weight of medical opinion, as stated above seems to be against Dukes' view. Until we know more about the bacteriology of scarlet fever and rubella, however, it is difficult to see how the question can be definitely settled. Meanwhile it would seem safer to regard those cases of the so-called "Fourth Disease" which resemble scarlet fever, as actual cases of the latter and treat them as such, especially as far as isolation is concerned. If they really are cases of scarlet fever, what is a mild infection in one child may give rise to an exceedingly severe infection in another child.

SCOPOLAMIN-MORPHIN ANESTHESIA.

JUDA, WIS., Dec. 4, 1905.

To the Editor:—Can you inform me by whom scopolamin is manufactured and where it can be obtained? I fail to find it in any of the drug stores here. H. B. GIFFORD, M.D.

ANSWER.—Scopolamin is not a new drug, it has been used to a certain extent for several years. It was first isolated as an alkaloid of scopola, hence the name. According to the eighth decennial revision of the United States Pharmacopeia, scopolamin hydrobromid is the hydrobromid of an alkaloid obtained from plants of the *Solanaceæ*, and is chemically identical with hyoscin hydrobromid. It occurs in crystals. It is a sedative, and as a mydriatic its action is somewhat similar to that of atropin, but without the disagreeable symptom of dryness of the throat. The similarity of action between this drug and hyoscin is evidently overlooked by many physicians or is unknown to them, and this, in conjunction with the fact that many individuals show a marked idiosyncrasy for hyoscin should be borne in mind when using drugs of this class. Scopolamin hydrobromate is made by Merck, and differs little, if any, from the hydrobromid. It also occurs in hygroscopic crystals. The manufacturers claim that it may be used externally in ophthalmology and internally (by hypodermic injection) in insane patients. It is used for local anesthesia in conjunction with morphin. While reports of successful operations find their way into the newspapers and into medical literature, unsuccessful operations apparently are not noticed. Recently, however, numerous fatalities have been reported. De Maurans has reviewed the literature on this subject, and in a recent article in *Semaine Médicale* he discusses the advisability of using this form of anesthesia. In most of the cases reported there was interference with respiration, as evidenced by dyspnea and cyanosis, and the Cheyne-Stokes type of respiration. In one case cited, about half an hour after the second injection of the scopolamin-morphin solution when the patient was lying on the operating table he was observed to be breathing with difficulty, and about three minutes later there was dyspnea and cyanosis. Artificial respiration was performed, but the patient died about five hours after the injection, with symptoms of asphyxia. Dr. J. C. Sexton, in the *Lancet Clinic* for November 18, also reports a death from this form of anesthesia.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of Medical officers, U. S. Army, week ending December 2:

Wadhams, S. H., asst.-surgeon, leave of absence extended 30 days.

Bratton, Thomas S., asst.-surg., relieved from duty as attending surgeon and examiner of recruits, Chicago, and ordered to Philippine Islands, for duty, on January 5.

Wadhams, S. H., asst.-surg., relieved from further duty at Alcatraz Island, Cal., and will proceed from Torrington, Conn., where on leave of absence, to Fort Slocum, N. Y., for duty.

Connor, C. H., asst.-surg., ordered to proceed from Fort Stevens, Ore., to San Francisco, for duty as witness before a general court martial.

Ford, Clyde S., asst.-surgeon, ordered to proceed from Fort Barrancas, Fla., to Cleveland, Ohio, on official business pertaining to the inspection of a motor ambulance designed for the Medical Department of the Army.

Davidson, Wilson T., asst.-surg., advanced to the rank of captain, November 26.

Reagles, James, contract surgeon, returned to duty at Fort Keogh, Mont., from leave of absence.

Parkman, Wallace, contract surgeon, left Fort Assinniboine, Mont., with troops for San Francisco.

White, J. Samuel, contract surgeon, granted an extension of one month to his leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending December 2:

Stuart, A., P. A. surgeon, detached from the *Pensacola* and ordered to command the Naval Hospital, Sitka, Alaska.

Bachmann, R. A., P. A. surgeon, commissioned P. A. surgeon from March 20, 1905.

Traynor, J. P., Strine, H. F., P. A. surgeons, commissioned P. A. surgeons from May 8, 1905.

Neilson, J. L., P. A. surgeon, commissioned P. A. surgeon from October 4, 1905.

Ransdall, R. C., asst.-surgeon, appointed asst.-surgeon from November 24, 1905.

Beyer, H. G., medical inspector, ordered to the *Wisconsin*.

Neilson, J. L., asst.-surgeon, detached from the naval hospital, New York, N. Y., and ordered to the naval hospital, Newport, R. I.

Shaw, H., asst.-surgeon, detached from the naval hospital, Boston, Mass., and ordered to the *Southery* and to additional duty at the navy yard, Portsmouth, N. H.

Vickery, E. A., asst.-surgeon, ordered to the *Illinois*, December 4.

Dorsey, B. H., asst.-surgeon, detached from the Illinois, December 4, and ordered home to wait orders.

Belknap, J. L., asst.-surgeon, detached from the naval hospital, Newport, R. I., and ordered to the *Brooklyn*.

Wheeler, L. H., asst.-surgeon, detached from the naval hospital, Newport, R. I., and ordered to the Asiatic station, sailing from Seattle, Washington, December 16.

Stepp, J., P. A. surgeon, detached from the *Southery*, and ordered to the *Don Juan de Austria*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending November 29:

Magruder, G. M., surgeon, relieved from duty at San Francisco.

Magruder, G. M., surgeon, granted leave of absence for four months from October 26.

Guiteras, G. M., surgeon, to proceed to Memphis, Tenn., for special temporary duty.

Wertenbaker, C. P., surgeon, relieved from special temporary duty at Atlanta, Ga., and directed to proceed to St. John, N. B., for immigration duty, relieving P. A. Surgeon J. W. Kerr.

Rosenau, M. J., P. A. surgeon, leave of absence granted for fourteen days from November 22, amended to read November 23.

Nydegger, J. A., P. A. surgeon, granted leave of absence for one month and five days from November 27.

Gardner, C. H., P. A. surgeon, granted extension of leave of absence for one month, from December 1.

Lavinder, C. H., P. A. surgeon, leave of absence granted for one month from November 6, amended to read twenty-one days from November 6.

Fricks, L. D., P. A. surgeon, granted leave of absence for one month from December 10.

Wille, C. W., P. A. surgeon, granted leave of absence for two months, from December 10.

Rucker, W. C., assistant surgeon, leave of absence granted for seven days from November 7, amended to read twenty-one days from November 11.

Ward, W. K., assistant surgeon, granted leave of absence for four days under paragraph 191 of the regulations from November 23.

Foster, A. D., asst.-surgeon, relieved from special temporary duty at Trieste and directed to rejoin station at Naples.

Robertson, H. McG., asst.-surgeon, relieved from temporary duty at the Bureau, Washington, D. C., and directed to proceed to Philadelphia, reporting to the medical officer in command for duty.

Collins, G. L., asst.-surgeon, granted leave of absence for two days under paragraph 191 of the regulations from November 23.

Ebert, N. G., asst.-surgeon, granted leave of absence for two months from November 24.

Wightman, W. M., asst.-surgeon, granted three days' leave of absence under paragraph 191 of the regulations from November 13.

Steger, E. M., asst.-surgeon, relieved from duty at Philadelphia, and directed to report to the commanding officer of the Revenue Cutter *Algonquin* for duty on said vessel in Porto Rican waters.

Kastle, J. H., chief division hygienic laboratory, granted leave of absence for eight days from November 27.

Goldsborough, B. W., acting asst.-surgeon, granted leave of absence for three days from November 29.

Hallet, E. B., acting asst.-surgeon, granted leave of absence for three days from November 29.

Hicks, B. L., acting asst.-surgeon, granted leave of absence for four days from November 28.

Hume, Lea, acting asst.-surgeon, granted leave of absence for thirty days from November 26.

McConnell, A. P., acting assistant surgeon, granted leave of absence for three days from November 29.

Tarbell, B. C., acting asst.-surgeon, granted leave of absence for ten days from November 21.

Walkley, W. S., acting asst.-surgeon, granted leave of absence for three days from November 30.

Richardson, S. W., pharmacist, granted leave of absence for twenty-three days from November 23.

Stier, C., pharmacist, granted leave of absence for seven days from November 22, under paragraph 210 of the regulations.

BOARDS CONVENED.

Board to meet at the Bureau, Washington, D. C., December 4, for the physical examination of certain officers of the R. C. S. detail for the Board: P. A. Surgeon T. B. McClintic, chairman; Asst.-Surgeon J. W. Trask, recorder.

Board to meet at the Appraisers Building, San Francisco, December 4, for the physical examination of certain officers of the Revenue-Cutter Service. Detail for the Board: P. A. Surgeon H. S. Cumming, chairman; P. A. Surgeon J. M. Holt, Recorder.

Board to meet at Boston, December 4, for the physical examination of certain officers of the Revenue-Cutter Service. Detail for the Board: Surgeon R. M. Woodward, chairman; Asst.-Surgeon W. C. Rucker, Recorder.

Board to meet at the Marine-Hospital, Mobile, Ala., December 4, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: P. A. Surgeon E. Francis, chairman; Acting-Asst.-Surgeon A. S. Taylor, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended November 27:

SMALLPOX—UNITED STATES.

California: Los Angeles, Nov. 11-18, 3 cases.
District of Columbia, Washington, Nov. 12-18, 1 case.
Florida, Jacksonville, Nov. 11-18, 3 cases.
Kentucky: Covington, Nov. 18-25, 8 cases.
Maine: Westport, Nov. 21-23, 2 cases.
Michigan: Kalamazoo, Nov. 12-18, 3 cases.
Missouri: St. Louis, Oct. 1-31, 12 deaths.
Ohio: Springfield, Nov. 17-24, 2 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Oct. 1-7, 4 cases.
Brazil: Rio de Janeiro, Oct. 15-22, 7 cases, 2 deaths.
Canada: Toronto, Nov. 11-18, 4 cases.
Chile: Iquiqui, Oct. 14-21, 7 cases, 2 deaths.
Ecuador: Guayaquil, Oct. 24- Nov. 7, 9 deaths.
France: Paris, Oct. 29-Nov. 4, 8 cases, 1 death.
Great Britain: Sheffield, Oct. 29-Nov. 4, 1 case.
Italy: Catania, Nov. 2-9, 3 deaths.
India: Calcutta, Oct. 1-14, 2 deaths; Madras, Oct. 14-27, 9 deaths.
Mexico: Mexico, Oct. 22-Nov. 4, 3 cases, 6 deaths.
Spain: Barcelona, Nov. 1-10, 6 deaths.

YELLOW FEVER—UNITED STATES.

Louisiana: New Orleans, Nov. 21, 2 cases.
Mississippi: Vicksburg, Nov. 24-29, 3 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Oct. 15-22, 2 cases, 2 deaths.
Cuba: Habana, Nov. 10-20, 25 cases, 2 deaths; Matanzas, Nov. 25, 1 case.
Ecuador: Guayaquil Oct. 22-Nov. 7, 7 deaths.
Honduras: Choloma, Nov. 13, 1 death.
Guatemala: Gualan, Aug. 20-Nov. 9, (estimated), 200 deaths; Zacapa, Aug. 3-Nov. 9 (estimated), 700 deaths.
Mexico: Cordoba, Nov. 5-8, 1 case, 2 deaths; Tezonapa, 1 case, 3 deaths; Tierra Blanca, 2 cases, 1 death; Tuxtepec, Nov. 5-19, 4 cases, 3 deaths; Vera Cruz, 3 cases, 3 deaths.
Nicaragua: Managua, Sept. 29, 3 cases.
Panama: Colon, Nov. 8-15, 1 case, 1 death; Panama, 1 case.

CHOLERA—FOREIGN.

India: Bombay, Oct. 17-24, 1 death; Calcutta, Sept. 23-Oct. 21, 178 deaths; Madras, Oct. 14-27, 123 deaths.
Russia: Lodz, Oct. 22-25, 4 cases; Vistula Territory, 6 cases; Lomja, 1 case; Warsaw, Oct. 17-24, 2 cases, 4 deaths.
Straits Settlements: Singapore, Oct. 1-7, 3 cases.

PLAGUE—INSULAR.

Honolulu: Oct. 7-Nov. 4, 8 cases, 8 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Oct. 15-22, 9 cases, 1 death.
Egypt: Alexandria, Nov. 8, 1 case.
India: General, Oct. 14-21, 4407 cases, 3336 deaths; Bombay, Oct. 17-24, 19 deaths; Calcutta, Sept. 30-Oct. 21, 32 deaths; Karachi, Oct. 15-22, 22 cases, 23 deaths.
Japan: Kobe, Nov. 20, present; Osaka, present.

Medical Organization

OREGON PRACTICALLY AN UNORGANIZED STATE.

By J. N. McCormack, M.D.

Chairman of the Committee on Organization of the American Medical Association.

BOWLING GREEN, KY.

Being an amiable optimist by nature, adverse criticism of any one, and more especially of those who have been kind to me, is always a difficult and unpleasant task. Still, I conceive it to be my duty after visiting a state in my official capacity, kindly and subject to correction always, but frankly and without fear or favor, to discuss professional conditions just as my investigations revealed them. In fact, years of experience have convinced me that this is the only course to pursue where reforms are to be hoped for, and that if it is done in the proper spirit, and is supplemented by such practical suggestions as may seem pertinent, and may prove helpful, it will never be misunderstood.

Outside of Astoria and Clatsop County there is little real organization in Oregon. Factionalism in the profession in the city of Portland, led by rival surgeons and other specialists, is almost entirely responsible for this demoralization in the state. In my opinion there is no hope for improvement until this is recognized and this strong and excellent profession can be harmonized and united for its own and the public good, in accordance with the modern spirit of organization.

They have a live local society of the old sort, honeycombed with and dominated by rival factions, most respectful and decent in form and expression, as might be expected from such leaders, but so evenly balanced and alert as to consume nearly all of their public energies, and so evidently personal and selfish as to fail to enlist the support or to command the confidence of the rank and file of the profession of the city or state for either side, and to effectually bar progress for it as a whole. The information came to me from various sources that many of the most active and influential physicians were outside of the society, some because they were kept out by factional jealousies and more because membership did not seem desirable under existing conditions. For instance, when it was suggested in my opening talk that a united profes-

sion ought to enlist the support of the press in the proper education of the public in regard to health and medical affairs and in the warfare against quackery, and that the family physicians of the leading newspaper men be put on a committee to confer with them, it developed that the physician of the most prominent editor of the state had been repeatedly blackballed by the society and hence could not well be asked to serve in this capacity.

These statements will come as a surprise to members of the Association who attended the Portland session and enjoyed the hospitality of the profession of that beautiful city. This surprise was only intensified with me when the opportunity for a more extended and personal acquaintance, and inquiry has confirmed my first impression of the high character and capability of the very men who were contributing most to the discord which is proving so disastrous to the best interests of the profession and people of their city and state.

To appreciate the extent to which these unfortunate professional conditions in Portland affect the state, it should be remembered that it is the only great center of population and commercial metropolis in Oregon, and that this city dominates in legislative and all other affairs to an extent which would be possible in few other states. And the state reflects the conditions found in the city very acurately. They had paper organizations in every county or district visited by me, meeting at long intervals and thought important chiefly as a means of keeping up membership in the state and national organizations. There were a few good men everywhere, but the average grade of the profession was low and the spirit non-progressive. Their law is weak and is so administered as to give quacks and pretenders no trouble. There was evidence on every hand that the schools of Oregon do not have high standards of requirements, and that their state examinations are such as to make this the dumping ground for low-grade men who fail to pass in neighboring or even distant states. The fees are much lower than in any other state visited on this trip, and commercialism—division of fees, lodge and other forms of contract practice, and similar evils—is more pronounced and widespread. I heard many apparently reputable men say over and over again that they would not think of sending a case to any surgeon who would not divide his fees with them. Similar expressions and other evidences of improper or defective methods inseparable from an unorganized profession were heard and found frequently. In the same locality would be found men of high attainments and character, natural leaders, who could easily become the backbone of a county society and make almost anything possible to the profession.

I urged such local organizations in every county where there were as many as three or four live physicians as would make their society a place for joint study, in effect a post-graduate or review school, and a social and business club. After they are thoroughly united and ready for it, I advised that the bar, ministerial, teachers, druggists' and other similar local associations be invited to meet with them for such discussion and joint instruction as will promote a co-operation so essential to the highest development and usefulness of our profession. I advised that legislators and other officials be especially invited to take part in these discussions in order that they may appreciate how largely the profession is influenced by purely altruistic motives in its efforts to secure and to enforce medical and health legislation.

I attended and addressed meetings at Astoria, Portland, The Dalles, Salem, Albany, Eugene, Grant's Pass and Medford, covering all except the eastern end of the state. Dr. Hamilton, the active and courteous secretary of the state association, gave prompt notice of the meetings, and as the medical population is practically confined to the towns, the meetings were fairly well attended.

The Astoria and Clatsop County Society is entitled to special and honorable mention, not only because it is an oasis in Oregon, but because it would be a credit to the profession in the best organized states. It is almost three years old, with every physician in the county, including two former homeopaths, and, I believe, one eclectic, enrolled as members. With the exception of one who lived twelve miles away, on the opposite side of the Columbia River, and was hindered by a fierce storm, every member was in attendance at the meeting held for me. Three circuit judges, the bar association and other laymen were present and took a leading part in both the discussion and the banquet which followed. These laymen had attended former meetings and contributed much to the interest and usefulness of the society, especially in the adjustment of the business affairs of the profession. The leaders of the profession in this county had grasped the co-operative spirit of this reform movement in a practical way at the outset, and as soon as the state association adopted the new plan, decided to give themselves the benefit of it. After a few conferences they succeeded in substituting harmony and co-operation for the discord and antagonism which had been as pronounced there in the past as it could have been anywhere. After uniting the profession solidly they abolished all lodge and contract practice in one week's time. A little later they revised their schedule of fees and put collections and the other business affairs of the profession on a modern basis, satisfactory alike to themselves and their patrons. They were most responsive to my suggestion for frequent meetings and systematic study, and promised to take prompt steps to this end, and also to enter into co-operative educational work with the other learned professions and the public generally. Altogether this impressed me as one of the most united and promising local societies to be found in any part of the country. If the profession of Portland could be induced to unite in this work, and would expend the energies on it in the future which its leaders have wasted in the past, the foundation for real organization could be laid before the next annual meeting of the state association, and plans made for legislative and other much needed reforms. Many of the smaller counties could undertake the work as successfully as Clatsop County did, without the assistance of Portland, and with the profession there in discord, but I got the impression that a majority of them would not do so.

My personal experience in Oregon was most pleasant. Mrs. McCormack was with me everywhere, and the physicians and their families vied with each other in contributing to our entertainment and comfort. I am tempted to mention individuals in this connection, but the hospitality was so general and generous that this will not be attempted. If a profession with such leaders could only be unified everything would be possible to it, and it is in the hope of arousing them to this duty that I have hesitatingly and reluctantly expressed these criticisms.

Iowa.

POCAHONTAS COUNTY MEDICAL SOCIETY.—We have received the program of the annual meeting of this society and find it suggestive of methods that will accomplish much good. Both an afternoon and evening meeting are provided for, with dinner between. The afternoon program is filled with regular medical papers and business. This is the purely professional and scientific part. Then follows dinner; this is the social—a very important—part, for it is this that brings men together, makes them understand and know each other, and thus dissipates jealousies. In the evening is the public meeting, at which the patient and the physician meet on a common level. The program before us states that at this meeting, besides music and recitations, three papers are to be heard: "Preventive Medicine and the Relation the Public Bears to the Profession," by a member; "The Public School as a Factor in the Public Health," by the superintendent of public schools, and "The Doctor—Both Sides of Him," by a member. This will be the second meeting of this society with the public, the former experiment having been a success.

This method of educating the public is being adopted by but a few isolated societies; it should be utilized by every county society in the country. The public wants to learn, is ever open to conviction, and a free interchange of views between the layman and the physician will result in good to both. The teacher, the lawyer, the editor will attend such meetings and the public-spirited citizen will always be a willing co-operator. These will leaven public opinion. There should be open, free discussion of business matters in these public meetings, as well as of the ethics of medicine and of health and disease.

We have one criticism to offer on the program of the Pocahontas society; it is that no provision is made for discussion at the public meeting. Less music and fewer recitations and time for discussion will make more interesting gatherings and bring about better results. It is the heart-to-heart talks that are wanted.

Kansas.

ALLEN COUNTY MEDICAL SOCIETY DID NOT DISBAND.—The following seems to be a morsel that is pleasing to a certain class of newspapers, for it has appeared in many of them:

SHORT-LIVED SOCIETY.

At Iola, Kansas, Thursday, the physicians of the county met and organized a society, fixing rates, all being the same. On Friday,

the prosecuting attorney of the county had warrants issued for the arrest of every physician in the county who joined the society, for the purpose of prosecuting them under the anti-trust law. The physicians were given until next Monday to disband their organization and they gave it out that they would do so.

We sent a clipping to the secretary of the society referred to, who has replied as follows:

"The Allen County Medical Society is now and has been in existence for nearly two years. Our old original society is three years old. We disbanded and reorganized March 28, 1904, in order to affiliate with the State Medical Society. We believe we have one of, if not the best county society in the state, and have our state charter. The meeting referred to was our regular meeting, which is the third Wednesday in each month. At this meeting we revised our fee bill, and our prosecuting county attorney merely stated to us that in his opinion we had violated the anti-trust law by agreeing to the fee bill. No warrants were ever issued, nor will there be any issued, as we will correct the matter at our next meeting. I desire that you publish this letter to show to the world, and especially to the medical profession, that newspapers are many times unreliable, especially along medical lines.

"J. W. BOLTON, Secretary Allen County Medical Society."

Society Proceedings

COMING MEETINGS.

Southern Surgical and Gynecological Association, Louisville, Ky., Dec. 12-14.

American Dermatological Association, New York, Dec. 28-30.

Western Surgical and Gynecological Association, Kansas City, Mo., Dec. 27-28.

AMERICAN TUBERCULOSIS EXHIBITION.

Held in New York City, Nov. 27 to Dec. 8, 1905, under auspices of the National Association for the Study and Prevention of Tuberculosis and the Committee on the Prevention of Tuberculosis of the Charity Organization Society at the American Museum of Natural History.

The idea of the exhibition is to show the methods that are being adopted throughout this country and Europe to prevent and to cure consumption. Toronto, Canada, had on exhibition the model of a tuberculosis sanatorium. There were models of sanatoria which are in use in the different states. Chicago sent models of her hospital buildings for this disease. Pennsylvania also had a fine exhibition, the institution at White Haven being specially deserving of mention. New York State had a large model of the sanatorium at Raybrook, which has been in operation two years. New York City showed how it takes care of its tuberculosis patients in tents on Blackwell's Island and in other places. There were several model tents and contrivances by which the sick person can breathe fresh air both day and night. There were also models of improved tenement houses which are a feature of the general plan for the prevention of the spread of tuberculosis. In contrast with these were specimens of the old-time dark bedrooms which are held responsible for a great deal of tuberculosis in the city.

Economics of Antituberculosis Work.

DR. THOMAS DARLINGTON, health commissioner of the city of New York, presided at the opening meeting, November 27.

MORRIS K. JESUP, in the opening address, said that if the people could awaken to the awful condition of the poor who are afflicted with this disease the effort they would make would result in vanquishing this plague.

DR. THOMAS DARLINGTON said that the object of the exhibition was to educate the public in regard to the prevalence of consumption and to teach them the best methods of prevention and cure. He spoke of what it would be worth to the city and to the individual if we could eradicate this disease. He said that the cost of educating a child is about $50.00 a year in the public schools; yet 24 per cent. of the deaths from tuberculosis occur between the ages of 15 and 25. He asked what is the use of educating children if they are going to die before they are able to use their education. If we are going to take such great pains and expense in their training we are morally bound to look to their physical condition as well. There are 28,000 cases of tuberculosis in Greater New York. The Board of Health is endeavoring to aid these by sending nurses, by clinics, by visiting physicians and by the distribution of literature. The greatest difficulty they encounter is the failure on the part of physicians to report cases of this disease. He thought, however, that at the present time from 90 to 95 per cent. of the cases are reported. During the past year 19,000 sputum examinations have been made, of which 6,000 proved not to be tuberculosis. Some of the worse cases were curable; 8 per cent. of the bad cases on North Brothers Island recovered and 60 per cent. were improved. He emphasized the necessity of an early recognition of the disease. The lungs of school children were now examined and adenoids removed. Forty-eight per cent. of the school children had something wrong which very often laid the foundation for tuberculosis. He urged more sanitary conditions in factories, shops and houses. After the death or removal of a tuberculous patient the Board of Health disinfects the rooms. He thought expectoration in public places could not be effectually done away with by law, but only by an educated public opinion. He strongly deprecated the use of patent medicine and drugs in combating this disease, as in most instances they are only alcoholic stimulants.

TALCOTT WILLIAMS, of Philadelphia, said that civic responsibility is just as direct and necessary in dealing with this disease as in dealing with political corruption. Our only hope lies in knowledge and in the education of the masses. He said that every case of consumption is a visible proof of social failure; the remedy is an individual sense of responsibility. If there are 5,000 deaths from consumption on the island of Manhattan, practically all of which can be prevented, and from 10,000 to 15,000 cases which could be saved from death, it is because neither the city nor the citizens have discharged their duty.

Health for Workers.

DR. THOMAS DARLINGTON presided at the meeting held on November 29. The subject discussed was "Health for Workers."

HERMAN ROBINSON, of the Central Federated Union, said that organized labor was doing all in its power to better social conditions in general, but particularly in connection with tuberculosis. It had made many workshops more healthful and was using every effort in that direction from day to day.

PROF. GRAHAM TAYLOR, of Chicago, spoke of the work in the West and told what had been accomplished there.

J. W. SULLIVAN, editor of the official publication of the garment workers and a member of the Typographical Union, told what had been done to improve sweatshop conditions, and called attention to the interesting collection of photographs illustrating the fearful conditions still existing in East Side sweat shops.

Recent and Coming Congresses.

On Friday evening, December 1, with DR. HERMANN M. BIGGS in the chair, DR. LAWRENCE F. FLICK, of Philadelphia, gave a brief history of the various tuberculosis conventions held since 1898 and outlined a plan for a congress to be held in Washington in 1908. He proposes that the expenses of this congress be defrayed by asking for $100,000, which could be raised by twenty wealthy men subscribing $5,000 each. It is his intention to endeavor to get this money at once and to permit it to remain undisturbed until 1908, when the accumulated interest will be distributed in prizes. He would give prizes on this occasion for the best exhibits from any country, for the best set of laws and ordinances dealing with conditions affecting tuberculosis, for the best sanatorium, the best pavilion, the best hotel, the best factory or workshop, etc. He proposes that the scientific portion of the congress be continued for one week in Washington, and that the social portion one week preceding and one week following the scientific sessions be held in various cities.

DR. EDWARD L. TRUDEAU, Saranac Lake, spoke of the work of sanatoria and said that he believed that future work in dealing with tuberculosis would be along the lines of specific treatment.

DR. W. A. EVANS, Chicago, member of the Tuberculosis Commission said that Chicago needed more agitation in regard to the means of getting rid of this disease. Chicago had but from $1,500 to $2,500 with which to combat this disease; in

fact, only the small fines secured from milk dealers and a few other petty offenders. In every instance we should seek the assistance of societies or other agencies working along kindred lines in our work against tuberculosis. Not more than 2 per cent. of consumptives are able to leave home and we must find a way to cure them at home. We must keep on trying to teach the value of fresh air and fighting the draught fiends. Consumption should not be viewed as an infectious disease alone, but should be regarded as something more if we ever expected to entirely eradicate it. If we were ever to make this scourge disappear we must learn to live more hygienic and more simple lives.

DR. VINCENT Y. BOWDITCH, Boston, said that he wished to sound a conservative note in regard to statements as to the results in the treatment of tuberculous subjects. This is too treacherous a disease to speak too early or with too much certainty of our successes. Too precipitate statements from physicians and overstatements of the press are harmful to the cause.

Exile and Drugs in the Treatment of Tuberculosis.

DR. ABRAHAM JACOBI, of New York, related the trials of the poor patient afflicted with tuberculosis and showed how impossible it is for him to go away from home in most instances. Statistics show that there is only one bed in a sanatorium for every 30 persons having tuberculosis; consequently home treatment has to be instituted. Much was said about Nature's remedies, fresh air, good food, etc., but drugs were Nature's remedies, too, and should not be neglected in every case. When in a family we see child after child show signs of tuberculosis it is well to look for syphilis in the mother. We should be careful to keep mucous membranes in a healthy condition and to see that enlarged tonsils are properly cared for. By proper attention to such matters one often obviates the necessity of treating consumption later. We should teach the value of exercise, cold water, a copious supply of oxygen, and that night air is better than no air. In addition to air, food and clothing we should recognize that there are drugs which, if wisely used, will help us in the treatment of this disease. In his hands guaiacol has given some very encouraging results, especially in the treatment of renal tuberculosis.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Treatment of Early Pulmonary Tuberculosis.

Price, in *Edinburgh Med. Jour.*, states that the cough which occurs early in the morning and which is accompanied by expectoration, is of service and should be encouraged. For the cough at night he recommends a cup of hot milk or cocoa, or tea, at bedtime, and occasionally through the night. In some cases he recommends a sufficiently warm alkaline draught similar to the following:

℞. Sodii bicarb.....gr. x |65
Sodii chloridi .....gr. v |30
Ammon. carb.....gr. iii |20
Spts. chloroformi.....m. v |30
Aq. anisi q. s. ad.....℥i 30|

M. Sig.: At one dose in a wineglassful of warm water or milk.

In some of these cases of early tuberculosis in which the cough is troublesome a small blister or iodin is recommended, applied to the subclavian region on the affected side. An irritable and ineffectual cough persisting through the day, accompanied by a very scanty expectoration after prolonged efforts, is best managed by instructing the patient to restrain the cough as much as possible and to use an inhalation containing menthol, creosote, oil of eucalyptus or oil of pine. A combination similar to the following is recommended in some cases:

℞. Olei euclaypti .....℥iii 12|
Olei amagdylæ amaræ.....℥i 4|
Spts. chloroformi .....℥i 30|

M. Sig.: From 10 to 75 drops to be inhaled, half an hour after the first morning cough; again at noon and in the evening. Or the following may be used as a modification of Dr. Coghill's formula:

℞. Tinct. iodi ether (Br.) |
Acidi carbol., āā.....℥ii 8|
Creosoti .....℥i 4|
Spts. vini rect., q. s. ad.....℥i 30|

M. As an inhalation. Or:

℞. Sol. menthol alc. (20 per cent.).....℥ii 8|

Sig.: Ten minims placed in an inhaler and inhaled for one-half hour. Or:

℞. Creosote |
Sol. menthol alc. (20 per cent.) |
Spts. chloroformi, āā.....℥i 4|

M. Sig.: Twenty drops to be inhaled from a sponge for one hour.

In case the foregoing combinations do not check the cough sufficiently this author recommends that a 2 per cent. solution of cocain be sprayed on the back of the throat. In some cases ipecac, potassium iodid or sodium bromid may be of value. Anodynes should be the last resort in these cases.

If the expectoration is peculiarly tenacious ammonium chlorid should form a part of medical treatment.

In the later stages of the disease, when the secretion is excessive, the internal administration of balsams or the inhalation of antiseptics such as creosote or turpentine, is the best treatment. If the patient shows indications of becoming exhausted during the night from the aggravated cough it will probably become necessary to administer some form of opium. There is danger, however, of upsetting the stomach, and this must be avoided if possible. Codein is less liable to disturb the stomach than the other preparations of opium. The following combination is recommended:

℞. Codeinæ .....gr. 1/6 |01
Acidi citrici.....gr. v |30
Spts. chloroformi.....m. v |30
Mucil. acaciæ .....℥i 4|

M. Sig.: To be taken at one dose and repeated as the individual case requires.

If paroxysms of coughing arise which terminate in vomiting of food, the patient should be instructed to lie perfectly quiet after a meal. In some such cases the following is advised by the author:

℞. Aluminis .....gr. v |30
Liq. potassæ .....m. v |30

M. Ft. cap. No. i. Sig.: To be taken just before nourishment.

If hemoptysis should arise and is sufficient in amount to require treatment, rest in bed is the important measure; this lowers blood pressure, slows the circulation and diminishes the movements of the lung. The patient should lie in the recumbent position with the head and shoulders elevated. And all unnecessary movements and talking should be prohibited. Warmth should be applied to the feet if the patient feels chilly.

All stimulants must be withheld, the food must be cold and limited to a pint and a half of milk a day, two ounces of meat essence, four ounces of bread and one-fourth ounce of butter. An icebag may be of value applied to the chest, but the author states very aptly that its only value, perhaps, is in preventing the patient from sitting up, and similarly, the sucking of ice for the time soothes the cough and causes the patient to believe that something is being done for him.

One of the most important means of checking hemoptysis, according to this writer, is to lower blood pressure by means of catharsis and free purgation. He recommends saline purgatives as the most valuable, such as the following:

℞. Sodii sulphatis.....gr. xx 1|30
Magnesii sulphatis .....℥i 4|

M. Ft. pulvis. Sig.: One such powder every four hours.

In cases in which hemoptysis is profuse a hypodermic injection of morphin may be given and repeated sufficiently often to keep the patient partially under the influence of the drug

for several days. [Morphin, however, should be used only when absolutely necessary, and then with great caution.—ED.] The only hemostatic from which the author has obtained results is the oil of turpentine given in 10-minim doses. Also ergotin is recommended hypodermically in doses of grains 1 to 3 (.06 to .20) as a hemostatic.

When hemorrhage of the lungs comes on suddenly and in considerable amount, so that the patient's strength is reduced and he becomes nervous, Thompson, in his *Practical Dietetics*, recommends absolute quiet in bed without a pillow, so that the body may be flat and the head and arms should on no account be raised. The patient should not be allowed to feed himself. A nurse should be in charge and small quantities only of food should be given at one time through a glass tube or by a teaspoon, so that the head need not be raised. If nausea occurs every effort must be put forth to control it, otherwise the muscular effort may bring on another hemorrhage. The blood pressure in the lungs must be reduced in order to allow the coagulation of blood to occur over the oozing surface, therefore, large quantities of fluid should not be taken at one time. The patient is usually thirsty from the loss of blood and temporary drying of secretions. The thirst may be relieved by crushed ice and small quantities of cold acidulated drinks, such as very dilute phosphoric acid or sour lemonade, and if the condition of the stomach is in proper condition, plain milk may be given, otherwise pancreatized milk and strong beef broth not exceeding two or three ounces in as many hours. The advantage of administering all fluids cold, according to this author, is overrated. Warm fluids have a somewhat more stimulating effect on the heart and are more rapidly absorbed, but the theory that cold taken in the stomach exhibits any great reflex, constricting action on the blood vessels of the smaller bronchi is not a rational one, according to this author.

In cases in which exceptionally large hemorrhages occur with a consequent loss of blood, it becomes necessary to give larger quantities of fluid, and salt water injections may be resorted to.

If there is no return of hemorrhage after one or two days the diet should be increased and the anemia consequent on the bleeding must be treated by abundant meat diet, avoiding alcoholic stimulants unless danger of heart failure should arise.

In the administration of cod-liver oil in tuberculosis the following combination after Bricemoret is recommended in *Twentieth Century Pract. of Med.:*

℞.	Olei morrhuæ	℥xii	360
	Syr. tolutani	℥vi	180
	Tincturæ tolutani	gr. xii	75
	Olei caryophyilli	gtt. ii	12

M. Sig.: Shake the mixture well and take one tablespoonful two or three times a day.

Iodoform, which is also recommended by some authorities in all degrees of phthisis, is recommended in the following combination:

℞.	Iodoformi	gr. iss	09
	Codeinæ	gr. 1/3	02
	Ext. cascaræ	gr. ss	03

M. Ft. pil. No. i. Sig.: One such pill three times a day.

If diarrhea is present the following is recommended:

℞.	Iodoformi	gr. xxx	2
	Acidi tannici	gr. lx	4

M. Ft. chart. No. xl. Sig.: From two to four powders daily.

Cinnamon has many advocates as a remedial agent in tuberculosis and may be combined as follows:

℞.	Quin. sulph.	gr. vi	40
	Tinct. cinchonæ co.		
	Syr. aurantii, āā	℥iss	45
	Aq. cinnamomi q. s. ad	℥viii	240

M. Sig.: One tablespoonful three or four times a day. Or:

℞.	Essentiæ thymi		
	Essentiæ eucalypti		
	Essentiæ cinnamomi, āā	m. lxxx	5 20
	Olei olivæ (sterilized)	℥iiiss	105
	Iodoformi	gr. lxxv	5
	Bromoformi	m. xxx	2

M. Sig.: Forty-five minims to be dropped into the trachea once a day.

Prescription for Asthma.

A correspondent calls our attention to an error in a prescription in THE JOURNAL, Nov. 25, 1905, page 1688. As corrected the prescription should read as follows:

℞.	Tincturæ lobelia	m. x	6
	Heroin hydrochloratis	gr. 1/24-1/2	0027-.0054
	Ammon. muriatis	gr. v	3
	Spiritus ætheris comp. q. s. ad	℥i	4

Medicolegal

Restriction on Use of Wood Alcohol.

Chapter 274 of the Laws of Wisconsin of 1905 provides that no person, firm or corporation shall require or wilfully permit the use of wood alcohol, or shellac or other material dissolved or mixed with wood alcohol, or columbian spirits, within any vat or tank, in such manner as to cause injury to or endanger the life or health of the person so using it, or of any other person.

Change in Requirements.

Chapter 41 of the Laws of Washington of 1905 amends section 3 of the act regulating the practice of medicine and surgery in that state by providing that each applicant for a license "shall be a graduate of some duly authorized medical college now having, if it still be in existence, at least a four years' graded course." The fee for examination shall be $25. And there is nothing said about reciprocity.

Provision for Prevention of Contagious Diseases.

Chapter 333 of the Laws of Wisconsin of 1905 appropriates to the State Board of Health a sum not exceding $50,000 for the two years ending Feb. 1, 1907, which shall be for a fund which, by and with the advice and consent of the governor, may be drawn on by the said board and used by it in such manner as may seem to it to be necessary to prevent the introduction or spread of Asiatic cholera or other dangerous contagious diseases in the state.

Must Report Tuberculosis.

Chapter 55 of the Laws of Utah of 1905 provides that it shall be the duty of every physician in the state, every superintendent of hospital or public institution in the state to immediately report to the State Board of Health every case of tuberculosis which he is called on to treat or which is in such hospital or public institution. Each and every physician or superintendent shall make such reports as may be called for by the rules and regulations made by said board to prevent the spread of such disease. Any person violating any provision of this act shall be guilty of a misdemeanor.

No Formaldehyd in Milk or Food Products.

Chapter 50 of the Laws of Washington of 1905 provides that any person who shall sell, offer to sell, or have in his possession for the purpose of sale, either as owner, assistant, or in any manner whatsoever, whether for hire or otherwise, any milk or any food products, containing the chemical ingredient commonly known as formaldehyd, or in which any formaldehyd or other poisonous substance has been mixed, for the purpose of preservation or otherwise, shall be guilty of a felony, and on conviction thereof shall be imprisoned in the penitentiary for a period of not less than one year nor more than three years.

No Advertising to Cure Venereal Diseases.

Chapter 78 of the Laws of Washington of 1905 provides that any person who shall advertise that he will treat or cure venereal diseases or disorders, or any venereal disease or disorder shall be guilty of a misdemeanor, and on conviction thereof shall be imprisoned in the county jail for a period of not less than one month nor more than six months. Any owner or managing officer of any newspaper in whose paper shall be printed or published such advertisement as is described in this act shall be guilty of a misdemeanor, and on conviction thereof shall be imprisoned in the county jail for a period of not less than one month nor more than six months.

Provides for State Tuberculosis Sanatorium.

Chapter 361 of the Laws of Wisconsin of 1905 provides for what is to be known as the Wisconsin State Tuberculosis Sanatorium for the treatment of pulmonary tuberculosis, especially for cases in the incipient stages of this disease. The general supervision and government of this sanatorium, except the financial supervision, shall be vested in an advisory board, which shall consist of five members appointed by the governor, one of whom shall be a member of the State Board of Health and at least two other members shall be licensed physicians, graduates of a reputable medical college. Applicants for admission to the sanatorium shall be examined at various places throughout the state designated by the advisory board.

State Hygienic Laboratory Continued.

Chapter 471 of the Laws of Wisconsin of 1905 continues for a period of two years at the state university in conjunction with the existing laboratories in bacteriology, the laboratory which was authorized by the legislature of 1903, known as the Wisconsin State Hygienic Laboratory. The purpose of this laboratory shall be to undertake the examination of water supplies for sanitary purposes, the examination of material from various contagious and infectious diseases with the purpose of aiding in the determination of proper diagnosis of such diseases, to examine into the nature and cause of disease outbreaks throughout the state, to study hygienic and sanitary problems relating to diseases and their dissemination, or any other problems that bear directly or indirectly on the public health.

Duties of Physicians Relative to Certain Diseases.

Chapter 192 of the Laws of Wisconsin of 1905 provides that in every city of the first, second, third and fourth classes it shall be the duty of every physician to report to the department of health in every such city, in writing, the full name, age and address of every person suffering from any one of the infectious or contagious diseases following, to-wit: Measles, smallpox, diphtheria (membranous croup), scarlet fever (scarlatina), typhoid fever, tuberculosis (of any organ), rubella (rötheln), chickenpox, typhus fever, plague, erysipelas, Asiatic cholera, whooping cough, cerebrospinal meningitis, yellow fever. It shall be the duty of every physician to report forthwith in writing to the said department of health the death of any person who dies from, or while suffering with or from any infectious or contagious disease, and to state in such report the specific name and type of such disease.

It shall be the duty of every physician, etc., in any such city, to report to the department of health thereof, in writing, or to cause such report to be made by some proper and competent person, the name, age, sex, occupation and latest address of every person afflicted with tuberculosis, who is in their care, or who has come under their observation, within one week of such time. It shall be the duty of every person sick with this disease, and of every person in attendance on any one sick with this disease, and of the authorities of public or private institutions or dispensaries, to observe and enforce all the sanitary regulations of such health department for preventing the spread of pulmonary tuberculosis.

In case of the vacation of any apartment or premises by death from tuberculosis, or by the removal therefrom of a person or persons sick with tuberculosis, it shall be the duty of the person or physician in charge, to notify the commissioner of health of such city within twenty-four hours thereafter, and such apartments or premises so vacated shall not again be occupied until duly renovated and disinfected as herein provided. In case any orders or directions of the commissioner of health requiring the disinfection of any articles, premises or apartments shall not be complied with within thirty-six hours after such orders or directions shall be given, then it shall be the duty of the commissioner of health to cause a placard in words and form as follows, to be placed on the door of the infected apartments, or premises, to-wit:

NOTICE.

Tuberculosis is a communicable disease. These apartments have been occupied by a consumptive and may be infected. They must not be occupied until the order of the health commissioner directing their renovation and disinfection has been complied with.

This notice must not be removed under a penalty of law, except by the commissioner of health, or an authorized officer.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

November 25.

1 *Yellow Fever in Cuba. J. Guiteras, Havana, Cuba.
2 *Relation of Stomach Disorders to Diabetes Mellitus. J. P. Sawyer, Cleveland, Ohio.
3 *Ambulant Treatment of Internal Hemorrhoids. C. F. Martin, Philadelphia.
4 *Disinfection of Dwelling Houses and Bedding. A. H. Stewart, Philadelphia.
5 *Purpura Hemorrhagica, with the Report of a Case Occurring During Pregnancy. B. Van Sweringen, Ft. Wayne, Ind.
6 Pernicious Malaria; Postmortem Disappearance of the Parasite. H. D. Bloombergh and J. M. Coffin, U. S. A.

1. **Yellow Fever in Cuba.**—Guiteras relates the circumstances of the last days of yellow fever in Havana, and uses the facts as arguments in support of the view that the mosquito is the only means of transmission of the disease. As some doubt has been expressed by some as to the demonstrative value of the experimental cases produced by Guiteras at Las Animas Hospital, he shows that there could have been no other source for the infection than the experimental application of the infected mosquito. He relates further how the disease has been introduced several times into Cuba without its ever taking a foothold in that old home of the disease, though the Las Animas Hospital may be looked on as a veritable powder magazine charged with explosives in the shape of accumulated fomites.

2. **Relation of Stomach Disorders to Diabetes Mellitus.**—Sawyer reports 19 cases which show that much may be accomplished for the comfort and relief of many diabetics by direct attention to the condition of the stomach. Of these 19 patients, 14 gave evident histories of previous dyspeptic trouble, 1 of alcoholism without dyspepsia, 3 of slight indigestion, and only 2 reported a complete freedom from dyspeptic disturbance. As to the duration of the glycosuria, 9 of the 19 have been diabetic for years, 7 for months, 1 possibly for a month, while in 2 the period is thought to have been from one to six weeks. From these considerations, as well as from the clinical history, all may be excluded from the range of alimentary glycosuria. Among them were cases of the severest type, as well as of the milder forms. With reference to the condition of the stomach, 16 show abundant catarrhal mucus in the contents of the stomach; 2 do not show this catarrhal process, and from 1, owing to age and disinclination, no test meal was obtained. As to motor function, 10 show a considerable failure, and of the 18 patients the secretion of hydrochloric acid in 8 is increased; 7 show normal proportions, 3 show less than normal or absent. Of the 19 patients all but 2 show definitely active catarrhal processes, and in every case of the 18 there has been marked subjective benefit—gain in strength, weight, freedom from thirst, and polyuria—gained by direct attention to the catarrhal process. The most striking effect has been observed on the polyuria and thirst. In some cases the percentage of sugar has undergone no change, but there has been in these cases a great reduction of the total excretion of sugar *per diem*, owing to the great change in the quantity of urine excreted, and the clinical course of this group of diabetics has been much more favorable under direct treatment of the stomach than without it. Moreover, the cessation of this treatment has been followed by the recurrence of the difficulty with prompt relief on resuming the treatment directed to the catarrhal process. In most of the cases lavage formed an important part of the treatment, antiseptic and alkaline solutions being used.

3. **Ambulant Treatment of Internal Hemorrhoids.**—Martin asserts that the treatment of internal hemorrhoids by hypodermic injection has fallen into disrepute among surgeons because it is the accepted method of the advertising quack. The many complications and accidents must not be ascribed to the method itself, but to the unscientific and insanitary technic employed by this ignorant class of irregular practitioners. It is to be remembered, Martin states, that the injection method is a surgical procedure as truly as the clamp and cautery or the ligature operations, and, therefore, is not a method to be

employed by the general practitioner. The advantages of the injection method are that the patient need not give up his business while under treatment and is not required to take an anesthetic like ether or chloroform. The treatment is usually painless and the complications few if the case is handled properly. The disadvantages are that, in a few instances, the treatment may be a little prolonged, and when the piles are greatly thickened and fibrous they do not completely disappear. For these cases Martin usually employs the ligature, operating under local anesthesia. The complications, such as pain, hemorrhage and strangulation, can be avoided by performing a free divulsion of the sphincter muscles under nitrous oxid anesthesia. This anesthetic is quick, safe and non-irritant, and the patient need not be confined to bed after the operation. About four days after divulsion, or when the primary sorenes has subsided, the treatment by injection may be commenced. Martin employs a 50 per cent. solution of phenol, injecting from 7 m. to 10 m. of this solution directly into the center of the pile. The injection is made through a conical speculum, care being taken first to swab off the surface of the pile with an antiseptic solution. The speculum is then withdrawn, allowing the rectal walls to collapse, after which the syringe may be removed. After introducing a suppository containing 3 m. of ichthyol the patient may return to his usual occupation. These suppositories are also used twice daily—one after stool and one at bedtime. Treatments should be given at intervals of from two to seven days and should be continued until all the hemorrhoidal masses have disappeared. Martin says that the method, if properly used, is perfectly safe; when it fails to cure no harm has been done, and one of the other operative methods may be tried.

4. **Disinfection of Dwelling Houses and Bedding.**—Stewart has devised an apparatus for the disinfection of dwelling houses and bedding. The apparatus consists of a tank made of heavy brass, 18 inches high and 8 inches in diameter. An air-pump attached to the side furnishes the air pressure and in this position also prevents the squirting of formalin solution into the face of the operator. There is no rubber hose on the machine and no rubber gaskets; the rubber tube generally used being supplanted by an ordinary gas bracket with two joints, which can be set in any position so that the operator can remain in an erect posture at all times. The stream of formalin is broken up by a whirling device at the extremity of the gas bracket. A continuous fine spray without the mixture of air can be thrown easily at a distance of from ten to twenty feet, allowing the operator to cover the surface of the room before the gas becomes unbearable. When loaded with two gallons of solution the weight of the machine is twenty-five pounds. About 500 square feet of surface can be gone over in three minutes. With a 5 per cent. solution of formaldehyd gas a series of 2,000 tests showed 97 per cent. of surface disinfection. The results were equally gratifying from a series of experiments to test the value of this method in the disinfection of bedding.

5. **Purpura Hemorrhagica During Pregnancy.**—Van Swearingen reports a case of purpura in a young woman of 25, which appeared in the fifth month of her first pregnancy. Hemorrhages occurred from the gums and nose, into the cellular tissue and skin, and appeared in the urine and vaginal discharge. From none of these localities was the bleeding very profuse or serious at any one time. Continuing, however, over a period of two or three weeks, considerable anemia was produced and the prognosis was rendered unfavorable. The hemorrhagic tendency subsided, however, the pregnancy went to term, the delivery was accomplished by forceps and was followed by no unusual hemorrhage, the puerperium being perfectly satisfactory. The treatment adopted consisted of rest in bed, 5-grain doses of calcium chlorid with 1 grain of extract of suprarenal gland every three hours and gelatin *ad libitum*. Several cervical cauterizations in the early months of pregnancy, done to relieve the severe nausea and vomiting, are looked on as possible causes of the condition because of the purulent discharge which followed. Absorption of infectious material from the cauterized areas seems probable, although no leucocytosis was present.

Medical Record, New York.
November 25.

7 Differential Diagnosis of Ectopic Gestation. B. H. Wells, New York.
8 *Facts Concerning the Early Diagnosis of Pulmonary Tuberculosis. J. H. Pryor, Saranac Lake, N. Y.
9 *Submucous Resection Operation for Deviation of the Nasal Septum; with Description of Several New Instruments. L. M. Hurd, New York.
10 Conservative Gynecology. C. G. Cumston, Boston, Mass.
11 *Tryon, N. C., as a Climatic Resort. H. J. Garrigues, New York.

8. **Early Diagnosis of Pulmonary Tuberculosis.**—Pryor states that as the result of observation and experience gained while acting as the first medical superintendent of the New York State Hospital for the Treatment of Incipent Tuberculosis, his conviction that pulmonary tuberculosis is rarely recognized at an early and proper time for successful treatment, has been decidedly strengthened. This conclusion is corroborated by the fact that the hospital, which was created under a law providing that only incipient cases could be admitted, has never contained more than one-third of the number of cases that could be accommodated. Inquiries submitted to a number of sanatoria in the United States to learn the percentage of incipient cases received, as thus defined, reveal the fact that the average percentage of all patients under treatment which could be designated as early and favorable varies from 2 to 30. An analysis of all cases treated at the New York State Hospital shows that 60 per cent. were received. In attempting to account for this state of affairs Pryor says that one reason is that the patient does not seek medical advice early enough. This is especially the case among the poor, who also often receive incompetent counsel when they do go to a physician or dispensary. Other reasons are the faulty education in medical schools and the recent tendency to give prominence to laboratory methods at the expense of the skill of the clinician. The classical symptoms almost invariably presented in combination, are loss of appetite, chlorosis or anemia, loss of weight, cough, with or without expectoration, hemorrhage, and fever. It is extremely rare that all of these are associated at an early time. They are apt to be present at a later stage. This is particularly true of patients who have had rest, nourishing diet, and open-air treatment. Many times, under these conditions, few or no symptoms are apparent, and yet the disease may be progressive. The author also discusses at length the physicial examination of the chest and points out the necessity for painstaking examination of the patient with clothing removed to the waist.

9. **Submucous Resection for Deviation of Nasal Septum.**—Hurd describes this operation, which he considers preferable to the older methods used for correcting deviations of the septum. The procedure consists in incising the mucous membrane over the deviation in a curve with the concavity backward. The flap of mucous membrane and perichondrium is elevated and the cartilage is scratched through with a curette until the mucous membrane of the other side is reached. This layer is then also separated from the septum and the portion of the latter forming the projection is excised with Ballenger's swivel knife. If bone must be removed the author's special down-cutting forceps is used. The mucous flaps are allowed to fall together and are kept in opposition for a few days by light packing. Hurd pays great attention to securing proper cocainization of the parts, and states that the operation may take from ten minutes to an hour. Several of the special instruments invented by Hurd are described and illustrated.

11. **New Climatic Resort.**—Garrigues praises Tryon, N. C., very highly as a resort for rheumatic and gouty people, convalescents after serious diseases or operations, anemic persons, those affected with tuberculosis, heart disease, or any ailment of the respiratory tract. Tryon is situated in the western part of North Carolina, at the foot of the steep slope forming the connection betwen the mountainous region and the lowland, slightly above the thirty-fifth degree of north latitude, at an altitude varying from 1,000 to 1,200 feet above sea level and about 250 miles from the Atlantic. The weather is mild and dry without extremes of temperature, winter or summer, and the author believes it is the best all-year-round climate in the United States. The annual number of sunny days is very large, drainage is perfect, and mosquitoes are rare. It can be

reached from New York in twenty-five hours, with one change of cars.

Boston Medical and Surgical Journal.

November 23.

12 Use of the Biograph in Medicine. W. G. Chase, Boston.
13 *Simple Method of Measuring and Graphically Plotting Spinal Curvature and Other Asymmetries by Means of a New Direct-Reading Scoliometer. G. W. Fitz, Boston.
14 The City Physician, His Duties and Responsibilities. J. H. McCollom, Boston.

13. **New Direct-Reading Scoliometer.**—Fitz sets forth a method which he considers practical, simple, accurate and inexpensive, by which definite measurements can be made. The apparatus employed comprises: 1. A scoliometer consisting of a sheet of transparent celluloid 2/100 inches in thickness and 52 cm. long, by as great a breadth as is desired, a convenient breadth being 16 cm., with rectangular graduations and with two level glasses set at right angles to each other for determining the level of both the horizontal and vertical lines of graduation. The longitudinal graduations are 1 cm. apart and every second one has waterproof black ink run into the line to facilitate the measuring. The cross lines, which are 3 cm. apart, also may be inked, but ordinarily it is not necessary. A small level glass (A), the tube of which is bent to the curve of a circle of 12-inch radius, is fastened on the lower part of the sheet at exact right angles to the longitudinal lines, so that when the bubble is on its index these lines are exactly vertical. Another similar level glass (B) is fastened in like manner on the central part of the sheet and adjusted so that when the bubble is at the index the longitudinal lines are horizontal and the cross lines vertical. 2. A black flesh pencil for making the spinous processes of the vertebra, anterior superior spines, clavicles, scapula and such other points as it is desired to measure for record. 3. Card catalogue cards of such size and graduation as desired, for recording and plotting. The method of application of the scoliometer is as follows: 1. To measure deviation of the spine the patient stands on a chair or platform about sixteen to twenty inches in height; the tins of the spinous processes of the vertebræ, the posterior superior spines, the spines and lower angles of the scapula are spotted with the flesh pencil. The scoliometer is then placed on the back in such a way as to bring the zero point of the longitudinal scale to the tip of the seventh cervical vertebra, and to bring the lower end of the midvertical line to the cleft of the buttocks. The middle line of the scoliometer then corresponds with the line of the spine, provided the latter is normal. If abnormal, the amount of lateral deviation from the median line is measured directly in the following manner: Looking at the back through the scoliometer and keeping the eye well away from the latter (about two feet), with the line of vision approximately perpendicular to the plane of the scoliometer at the point where the measurement is being made, the graduations of the scoliometer projected on the back of the subject are seen, and the amount of the deviation from the median line is shown in centimeters and fractions. The vertical distance is read and recorded downward from the zero point on the seventh cervical spine to the successive distances, and the amount of lateral deviation of the spine from the median line is noted at each of these successive points (or such of them as are necessary to define the curve). 2. To measure the lateral deviation at the spine with reference to a true vertical midline, the scoliometer is placed on the back of the patient with the zero of the seventh cervical process, the bubble of level A being at its index; the lines of the scoliometer are vertical and the measurement can be carried out as above. This is usually a more significant measurement, since it measures lateral posture as well as deformity. 3. The lateral contour of the trunk, if desired, may be measured, recorded and plotted by the scoliometer in like manner, either by having the scoliometer broad enough to include the entire trunk or by shifting the median line of the narrower scoliometer a measured distance to each side of the median position recorded as above and then measuring the deviations of the side contours and plotting them in their proper relation to the median curve. 4. To measure the lateral displacement of the shoulders in relation to the pelvis the zero point of the scoliometer is placed on the tip of the seventh cervical spine; the scoliometer is swung to the vertical position; the latter distance of the lower end of the median line is read off from the cleft of the buttocks, and recorded as displacement of shoulders to right or left of pelvis. 5. The lateral tilt of the pelvis, due to a short leg, to congenital deformity, or to functional shortening through flattening of the arch of one foot or relaxation of knee when bearing weight, may be measured by spotting the anterior superior iliac spines with the flesh pencil and then applying the scoliometer so that the longitudinal lines are horizontal as determined by level B; if the zero line is then adjusted to one of the anterior superior spines the relation of the other to it is determined and any tilting present is discovered and measured. 6. By holding the scoliometer at the side of the patient it is possible to measure and to record antero-posterior curves with a fair degree of satisfaction in many cases, though the apparatus is not especially adapted to this purpose. 7. With the scoliometer in a horizontal position the difference in levels of shoulders can be instantly measured. The observer should stand in front of the subject. A number of other applications of the scoliometer are feasible as, for example, measuring the lateral or antero-posterior deviation of the head, the level of the eyes, and the horizontal and vertical position of the arms.

Medical News.

November 25.

15 *Treatment of Bronchitis in Children. J. E. Winters, New York.
16 *Pleseometer for the Accurate Determination of Abdominal Rigidity. T. W. Kilmer, New York.
17 Perforation of an Ulcer of the Duodenum, with Remarks on the Diagnosis and Treatment of this Affection. C. G. Cumston, Boston, Mass.
18 Care of the Aged and the Infirm in the Tropics. M. G. Y. Martinez, Manila, P. I.
19 Substitution of Drugs in the Dispensing of the Physician's Prescription. W. J. Cruikshank, Brooklyn, N. Y.
20 A Phase of the Yellow Fever. L. O'Connell, Washington, D. C.

15. **Treatment of Bronchitis in Children.**—Winters says that the treatment of bronchitis in children necessitates intimate acquaintance with the structure of the bronchi, and with every alteration in this structure at each step and every hour of the morbid process. The child should be placed in a crib—never on a bed. The crib should be flannel lined and should be in the center of the room—never near a wall, window or door. Sometimes it becomes necessary to place screens about the crib to avoid draught. Light flannel should envelop the child's body, arms and legs. This, says Winters, comprises nine-tenths of the treatment to be adopted in a case of moderate severity. In severe cases the drug recommended by him is aconite, to be given in water only, in small (less than one drop) doses, repeated often. Intestinal elimination, diaphoresis, aconite and sweet spirits of niter are the febrifuge measures employed by Winters. Coal-tar derivatives he considers contraindicated. Cold applied to the cutaneous capillaries he says is unphysiologic, pernicious and conducive to extension. It is wrong to give stimulating expectorants. When the secretion becomes excessive, the child should be kept in the prone position to secure gravitation of the secretions. Emetics may be given. Oxygen inhalations should be continuous—even during sleep. These measures Winters supplements with mustard packs and maximum doses of spirits of camphor and carbonate of ammonia. He has found castor oil, in 10-minim doses a most efficient remedy for the harassing cough in inflammation of the upper respiratory passages. In older children in whom the irritation of coughing superinduces nervous irritability, small doses of codein may be given. [This drug should be used cautiously in children.—ED.] He discountenances the use of steam inhalations on the ground that they increase the susceptibility to cold, to catarrh of the larynx and bronchi—catarrhal croup.

16. **Determination of Abdominal Rigidity.**—The instrument devised by Kilmer apparently is identical with the one invented by H. A. Kelly of Baltimore, and described in the *Johns Hopkins Hospital Bulletin* of September, 1904. Kelly called his instrument a piezometer.

New York Medical Journal.

November 25.

21 *Significance and Management of Chronic Uterine Hemorrhage. G. E. Shoemaker, Philadelphia.
22 Appendicitis in Children. C. C. Barrows, New York.
23 Observations on Heart Disease, Especially Among the Negroes. C. R. Grandy, Norfolk, Va.
24 *Scopolamin-Morphin-Chloroform Anesthesia. M. K. Isham, Cincinnati, Ohio.

25 *Scopolamin as an Anesthetic. H. C. Sharp, Jeffersonville, Ind.
26 Nephritis and Hematuria. H. A. Fowler, Washington, D. C. (To be concluded).
27 Fatal Fat Embolism Following Impacted Fracture of the Cervix Femoris. B. Robinson, Chicago.

21.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1437.

24. **Scopolamin-Morphin Chloroform Anesthesia.**—Isham recommends the injection of scopolamin hydrobromid 1/100 gr. and morphin hydrochlorid 1/6 gr., preliminary to operations requiring a long anesthesia, and also even before short operations when the patients are very nervous, excitable, and either suffering great pain before, or liable to suffer after the operation. The literature is reviewed and additional cases are cited.

25. **Scopolamin as Anesthetic.**—Sharp says that if scopolamin deserves a place among anesthetics it is without doubt in combination with chloroform. The inconstancy of its action renders it impracticable when used alone or with morphin. In fact, continues Sharp, it is doubtful if it would ever produce anesthesia when given alone on account of the extreme restlessness which is present unless morphin is given. While scopolamin may not prove to be the ideal anesthetic, it is without doubt worthy of further investigation, and Sharp believes that with improved technic it will show itself to be an improvement over the present methods. The method of procedure adopted in 3 cases is described in detail.

St. Louis Medical Review.

November 25.

28 Curiosities of Ancient Japanese Medicine. J. Knott, Dublin, Ireland.

New Orleans Medical and Surgical Journal.

November.

29 Gonorrheal Conjunctivitis in the Adult and in the Infant. H. D. Bruns, New Orleans.
30 Fracture of the Lower Extremity of the Radius. C. J. Gremillion, Alexandria.
31 Plea for the More General Use of Electrotherapeutics. A. Granger, New Orleans.
32 Tetanus Following Wounds Inflicted by the Explosion of a Gigantic Firecracker. F. M. Thornhill, Arcadia.
33 Pathology of Yellow Fever. P. L. Pothier.
34 *Treatment of Yellow Fever. L. F. Solomon.

34. **Treatment of Yellow Fever.**—Solomon asserts that no one stricken with yellow fever should die unless there existed, previously, disease of the heart or of the kidney. He outlines his treatment as follows: The first step necessary is the administration of a large saline purgative, preferably sodium sulphate. This thoroughly cleanses the entire intestinal tract. It is not necessary to give calomel or any purgative, because the sodium sulphate, in addition to its flushing power, also acts as a cholagogue. Often when the patient is seized with the attack there is undigested food in the stomach. If this occurs a short time after eating the patient will vomit and empty the stomach of food. If the seizure comes on three or four hours after a meal, and there is still some undigested food in the stomach, there will be nausea. In such cases Solomon states that it is well to give minute doses of calomel for the purpose of quieting the stomach, so that the sodium sulphate will not be rejected. For this purpose the following combination is the best adapted to the purpose: A powder consisting of 1/4 grain of calomel with 1 grain of ingluvin. This is to be repeated every twenty minutes until four are taken, and then followed in half an hour with one-half or one ounce of sodium sulphate dissolved in a glassful of water. Very frequently the intense headache accompanying the onset of the attack will be relieved after the administration of the saline. If not, relief can be obtained by the old-time hot footbath. One hour after the administration of the purgative, and without necessarily waiting for its action, Solomon begins the administration of the following prescription:

R. Potassi nitratis	ʒi	4
Liq. ammoniæ acetatis	ʒiiiss	105
Syr. aurant. flor	ʒiv	16

The adult dose of this mixture is half an ounce, repeated every two hours during the continuance of the fever. The liquor ammoniæ acetatis is administered in conjunction with the potassium salt for its action on the skin, as it causes free diaphoresis, thus favoring elimination. The potassium nitrate in addition to its specific effect as on antitoxin, also acts as a prophylactic diuretic. Within a few hours after beginning the administration of the above mixture the temperature, no matter how high at the outset, will begin to decline and will decline progressively until the end of the third day, when convalescence will begin.

Archives of Pediatrics, New York.

October.

35 *Stenosis of the Pylorus in an Infant. J. C. Griffith, Philadelphia.
36 *Two Operative Cases of Pyloric Stenosis in Infants. T. M. Rotch and M. Ladd, Boston.
37 *Study of Leucocyte Counts in Fifty Cases of Bronchopneumonia, Lobar Pneumonia and Empyema in Children. H. Heiman, New York.
38 Feeding Chart for Infants and Its Educational Advantages. C. Douglas, Detroit.
39 *Infection with Scarlet Fever Through Open Wounds. C. Herrmann, New York.
40 Infant Mortality in Michigan and Detroit, with an Inquiry Concerning a Normal Infant Mortality. H. M. Rich, Detroit.
41 Starvation Diet. E. L. Coolidge, New York.

35. **Stenosis of the Pylorus.**—Griffith reports a case of this kind occurring in an infant on the sixteenth day after birth, the obstruction evidently being chiefly spasmodic, although the obstruction was probably increased by the swelling of the mucous membrane caused by the irritated state of the whole gastrointestinal tract. The child was treated symptomatically and made an uneventful recovery.

36. **Id.**—Rotch and Ladd report 2 cases. One patient was three weeks old. A diagnosis of pyloric stenosis was made from the clinical picture and immediate operation advised. On opening the abdomen the stomach was found dilated to about the size seen in a normal infant of three months, and at the pylorus was situated an oval solid tumor approximately ¾x⅜ inches in diameter. A posterior gastroenterostomy was made with clamps and suture, a jejunal loop being used. The child recovered from the operation, and one year later was in good health and of normal development. The second patient was four weeks old. The pylorus was firm, making a mass about one inch long by three-eighths of an inch in diameter. The obstruction was complete. The lowest anterior portion of the stomach was withdrawn from the abdomen and seized with clamps; the jejunum being too small to clamp, was seized with hemostatic forceps, at a portion farthest from the mesentery, and approximated to the stomach. A running stitch, including the peritoneum and muscles, was carried along the posterior approximated surfaces. An elliptical piece of the stomach was incised and a longitudinal slit was made, cutting the duodenum in front of this stitch; a continuous silk stitch was carried around, uniting these openings, and passing through all the layers. The posterior stitch was then continued around through the serous and muscular coats, in front of the deep layer of stitches and tied at the starting point. The clamp and walling-off gauze were then removed and the area washed with salt solution. The stomach and the jejunum were returned to the abdomen. The omentum was tucked around the area. The incision was then closed with interrupted silkworm stitches through the entire abdominal wall. The patient died on the fourth day after the operation from exhaustion.

37. **Leucocyte Counts in Pneumonias of Children.**—Leucocyte counts were made by Heiman in 19 cases of bronchopneumonia occurring in children from 10 months to 5½ years. The highest leucocyte count taken during the height of the illness was 73,000; the lowest, 12,600. There were 12 recoveries and 7 deaths. In the former all the counts during the first few days of the illness were high, while toward the end of the illness the counts were low except in two cases, one being complicated by mastoiditis and the other by tonsillitis. All the 7 fatal cases gave high counts early in the disease; shortly before death the counts in 4 of these cases were markedly diminished, while they remained high in 3 cases. Heiman also studied 24 cases of lobar pneumonia occurring in children varying in age from 2½ to 9 years. The highest count, while the pneumonia was active, was 55,800; the lowest, excluding a post-typhoid case and a case of pleurisy, was 20,200. There were only 2 fatal cases, and in both a well-marked leucocytosis was present during the height of the disease, while just before death a marked drop in the leucocyte count was noted. In 7 cases of empyema studied there was a marked leucocyto-

sis at the onset. There were 6 recoveries and 1 death; the fatal case gave the highest blood count at the onset of the disease and the highest terminal count. Heiman found that the leucocytosis in the bronchopneumonia is independent of the amount of lung involved, nor does the degree of leucocytosis stand in any relation to the height of the temperature. Though there are some exceptions, the general rule in bronchopneumonia is that failure of the leucocyte count to drop when the pulmonary signs disappear indicates either a complication or a fatal termination of the illness. A constant and considerable leucocytosis may regularly be expected in the lobar pneumonia of children. The degree of leucocytosis is about the same as in bronchopneumonia, but differs in that the white count is higher when the pulmonary involvement is greater. An increasing leucocytosis is the general rule in the lobar pneumonia of children, reaching the maximum just before the crisis. While failure to drop before the crisis may indicate a complication, yet this may be of no special significance. In general, Heiman says, the diagnostic value of the leucocytosis in the pulmonary affections of children is limited. In certain instances, however, the leucocyte count is of great diagnostic aid. When, for example, in lobar pneumonia, resolution and the drop in the leucocytosis has occurred, and there are present signs exciting suspicion that empyema will be a sequel, blood counts should be made frequently at regular intervals. A sharp rise in the count, provided that other causes of leucocytosis can be excluded, is then strong presumptive evidence of a supervening empyema.

39. **Infection in Scarlet Fever.**—Herrmann summarizes his paper as follows: 1. Cases of scarlatinal infection through open wounds have the following characteristics—(a) the period of incubation is short; (b) there is a characteristic change in the appearance of the wound following infection; (c) the neighboring lymph nodes become enlarged; (d) the rash usually (but not necessarily) begins at the point of inoculation; (e) the throat symptoms are mild, there is no exudate or marked involvement of the submaxillary glands; (f) after the rash has reached its height the wound improves rapidly in appearance; (g) desquamation usually (but not necessarily) begins around the wound. 2. Extrabuccal infection with scarlet fever is probably more frequent than is generally supposed. It should be looked for in cases in which (a) the period of incubation is unusually short; (b) those in which the throat symptoms are slight; (c) cases in which the rash makes its first appearance in an unusual location. 3. All children exposed to scarlatinal infection should have open wounds (including vaccination) covered by a protective dressing. 4. The period of incubation in scarlet fever depends on (a) the virulence of the contagious material; (b) the receptivity of the individual; (c) the portal of entry of the infectious material. 5. An individual who is immune to infection in the ordinary way may contract the disease by direct inoculation.

Journal of Cutaneous Diseases, New York.

October.

42 Epithelioma of the Forehead Having Its Origin in a Papillary Nevus. J. F. Schamberg and R. Hirschler, Philadelphia.
43 *Small Multiple Kerion: An Unusual Type of Tricophytosis. J. F. Wallis, Philadelphia.
44 Clinical Aspect and Treatment of Pompholyx. F. J. Leviseur, New York.
45 *Mycosis Fungoides and the X-ray. A. J. Markley, Cincinnati, Ohio.

43. **Tricophytosis.**—Wallis cites 10 cases occurring in girls ranging in age from 8 to 17 years. In each case pediculosis was present, and in nearly every instance an existing cutaneous eruption was attributed originally to the pediculosis, which was later shown to be erroneous. The clinical appearance presented was similar in each case of the series; the primary folliculitis followed by pustulation, then by rupture and scar formation with temporary alopecia, followed by restoration of hair, the cycle being repeated in many instances. Particularly characteristic was the recurrence of the lesions on sites of previous lesions. Another feature especially distinctive was the appearance of the black dots at the margins of the lesions, representing the broken-off stumps of diseased hairs. Microscopic examination of the hairs and cultures taken from them demonstrated the presence of ringworm fungus. The microscopic examination, the growth in cultures and the complete recovery without the destruction of hair follicles, producing permanent baldness, is conspicuous. Wallis concludes, in view of these histories and observations, that these were cases of an unusual type of tricophytosis previously neglected and unrecognized by reason of the associated pediculosis capitis. This series of cases also serves to emphasize the necessity of careful microscopic examination in all scalp conditions.

45. **X-Ray in Mycosis Fungoides.**—Speaking of the treatment of mycosis fungoides, Markley says that in the *x*-ray we possess the most active agent for relieving the tortures and symptoms of this hitherto incurable disease. The history of one case is cited in which the affection involved practically the entire body. The treatment with the *x*-ray was begun at once, using a soft tube at a distance of eight inches, exposing each area five minutes, making about twelve different exposures at each seance and two seances a week at first. In addition, mild and soothing antipruritic lotions were prescribed. At the end of six weeks practically all the patches had disappeared, and the skin was soft and smooth but very deeply pigmented. The general condition of the patient improved rapidly, as did also her appearance.

Journal of Nervous and Mental Diseases, New York.

October.

46 Case of Cerebral Tumor Presenting Confusing Symptoms. F. R. Ray, St. Louis.
47 Mysophobia. J. Punton, Kansas City, Mo.
48 *Acute Anterior Poliomyelitis in a Youth. T. A. Hoch, Worcester, Mass.
49 Anesthesia Associated with Hyperalgesia Sharply Confined to Areola-Nipple Area of Both Breasts, A New and Apparently Constant Stigma in Hysteria. W. W. Graves, St. Louis.

48. **Acute Anterior Poliomyelitis.**—Hoch holds that anterior poliomyelitis is the result of a primary inflammatory disease of the blood vessels of the cord which may be thrombotic or embolic. The destruction of the ganglion cells is secondary and depends in part on the deficient blood supply of the diseased area and in part on pressure and toxins. The pathologic changes occurring in poliomyelitis of children and adults are apparently identical and dependent on similar causes. There is sufficient evidence at hand to consider the disease as a rule of an infectious nature, not depending, however, on a specific micro-organism, but resulting from bacterial infections of various kinds and at times from other poisons. The inflammatory changes are present in the peripheral vessels as well as in the branches of the anterior spinal artery, though these changes are seldom visible until the vessels enter the gray matter. The inadequate collateral circulation within the anterior horns is favorable for sluggish circulation and embolism.

Interstate Medical Journal, St. Louis, Mo.

October.

50 Treatment of the Acidosic and Sugar States from Traumatism. G. F. Butler, Chicago.
51 *Clinical Study of the Diagnosis of Urinary Calculus. B. Lewis, St. Louis.

51. **Diagnosis of Urinary Calculus.**—Speaking of the value of the Roentgen ray in the diagnosis of urinary calculi, Lewis says that the examination is painless, requiring neither local nor general anesthesia. There is no danger from traumatism or infection, and the danger from burn is practically *nil*. Not only does the skiagraph show the exact location of the stone, it also shows the number of stones present. It does away with the necessity of doing an exploratory operation for diagnostic purposes. It differentiates calculous nephritis from other conditions in neighboring organs, and the negative diagnosis is as accurate as the positive, except in very stout patients. The percentage of error in all cases skiagraphed has been less than 3 per cent., and in the majority of cases in which there were erroneous negative diagnoses the calculi were so small that they passed without surgical interference.

American Practitioner and News, Louisville, Ky.

October.

52 Hyperchlorhydria. C. G. Lucas, Louisville.
53 Optical Aphasia. J. J. Moren, Louisville.
54 Exophthalmic Goiter, Basedow's Disease—Grave's Disease. G. B. Jenkins, Louisville.
55 *Jequerity and Trachoma. P. R. Taylor, Louisville.
56 Ventrosuspension and Fixation of Uterus. C. W. Hibbitt, Louisville.

55. **Jequerity and Trachoma.**—Taylor uses jequerity in trachoma. The infusion, tincture or powder may be used. Taylor prefers the impalpable powder, which he dusts lightly on the everted lid. The eye is then closed for two or three hours with a light bandage. The application is always attended with severe pain, which usually becomes intense from three to five hours after the application. Swelling of the lids often occurs, and often extends to the forehead, cheek and nose, and sometimes the lips are swollen. Escharotics, silver nitrate, sulphate of copper, etc., with rollers, may be used in conjunction with jequerity, but the escharotics will produce greater destruction of normal tissue than the jequerity. Taylor has never lost an eye from the use of jequerity, but has had the swelling assume alarming proportions, and for this reason he never applies the powder until the patient is in an infirmary where the swelling can be best controlled. Out of 73 cases, in not a single instance has the result been disappointing, the patients being discharged in from six weeks to three months. Twenty-two cases were placed in the infirmary the second time from four to eight months after the first treatment and jequerity applied again with complete relief. [The United States Dispensatory states that according to de Wecker the cold infusion, one part to twenty, has been used in chronic granular conjunctivitis, but is much too strong and is liable to set up violent conjunctivitis or keratitis.—ED.]

Surgery, Gynecology and Obstetrics, Chicago.

October.

57 *Establishment of Cerebral Hernia as a Decompressive Measure for Inaccessible Brain Tumors. H. Cushing, Baltimore.
58 Fibroma of the Gastrohepatic Omentum in the Lesser Peritoneal Cavity. J. B. Murphy, Chicago.
59 Dermoid Cysts of Intestine and Mesentery. W. Jepson, Sioux City, Ia.
60 *Echinococcus Disease of the Heart. C. G. Grulee, Chicago.
61 Diagnosis and Treatment of Some Surgical Diseases of the Urinary Bladder. W. E. Lower, Cleveland.
62 Combined Malignant Tumors of the Female Genitalia. P. Findley, Chicago.

57. **Establishment of Cerebral Hernia for Inaccessible Brain Tumors.**—Cushing states that inasmuch as the symptoms accompanying brain tumor are due to the pressure effects of a slowly enlarging foreign body, it should be possible to relieve them by allowing the compressed brain to protrude through an artificial opening in the skull. In younger individuals this may occur through separation of the already fused sutures. Cushing has seen three instances of this kind. He says it would be a mechanically ideal treatment for cases of inaccessible tumor if in adult life it were possible to bring about such a dislocation of the sutures in the cranial vault. As this can not be done, recourse must be had to decompressive methods which are less perfect inasmuch as they do not so evenly distribute the compression. In order to control the growth of the cerebral hernia Cushing now makes the bone defect under the temporal muscle. The advantages are many. An oval opening may easily be made, about five or six by eight or ten cm. in its two diameters without freeing the muscular insertion at the temporal ridge. Being in a comparatively thin and relatively non-vascular portion of the skull, the bone is easily rongeured away and the opening on one side alone is usually sufficient for decompressive purposes. Should it prove not to be, a bilateral operation of the same kind may be made. The denuded area of the cortex exposes, for the most part, the convolutions below the fissure of Sylvius, including only the very lowest part of the motor strip, so that, even in cases of extreme unilateral bulging, the greatest harm that would ensue would be from an implication of the center for the tongue, jaw and lower part of the face on the one side. The incision is entirely within the hair margin, and the degree of protrusion that may take place under the protection of the muscle may not be at all obtrusive. Cushing states that the results obtained by this method, which is described in full, have been most gratifying.

60. **Echinococcus Disease of the Heart.**—Grulee believes that his case was probably one of primary echinococcus disease of the heart with secondary infection of the lung. This is suggested (1) by the diffuse infection of the latter; (2) by the peripheral location of the cysts in the lungs; (3) by the intimate connection of certain of the cysts with pulmonary vessels; (4) by the presence of daughter cysts in a cyst located in the right auricle, and (5) by the fact that an existing pulmonary tuberculosis was all on the right side, while the echinococcus cysts were about equally distributed between the two lungs. No trace of the echinococcus disease was seen in any other organs than the lung and heart.

International Journal of Surgery, New York.

November.

63 *Uterine Curettage; Indications and Contraindications; Technic; Complications. E. E. Montgomery, Philadelphia.
64 Early Indications for Mastoid Operations. W. S. Bryant, New York.
65 Surgical Aspect of Cystoscopy and Ureter Catheterization. G. W. Jones, Keokuk, Iowa.
66 Perinephritic Abscesses in Children. G. R. Curran, Mankato, Minn.
67 Pathology and Operative Treatment of Cholelithiasis. C. G. Cumston, Boston.
68 Dangers Attending Neglect of the Ears During Scarlet Fever, Diphtheria and Measles. A. L. Bennett, Denver, Colo.
69 Uncommon Acute Infections with Surgical Treatment. S. E. Maynard, Burlington, Vt.

63. **Uterine Curettage.**—Montgomery says that uterine curettement is so pregnant with disastrous possibilities that it should only be essayed by one who is so skilled and trained in aseptic methods that he can protect his patient from danger of infection. The procedure in the most careful hands may be attended with perforation of a softened uterine wall. The occurrence of perforation does not of itself demand an abdominal section for closure of the opening, for in the great majority of such injuries the patients recover without any serious symptoms, but in case of injury of intestine from perforation and the dragging of a loop of intestine through the opening, or in the presence of sepsis, the peritoneal cavity should be opened by abdominal section in the first instance, and the injured intestine treated by suture or excision, as the lesion may demand, while in the second instance the section may be either abdominal or vaginal, as operator elects.

American Journal of Surgery, New York.

October.

70 Plea for the Early Routine Extirpation of all Neoplasms. B. Saunders, Ft. Worth, Texas.
71 Paraffin in Surgery. W. H. Luckett and F. I. Horn, New York.
72 Cystoscope and Ureter Catheter in the Diagnosis and Prognosis of Surgical Diseases of the Kidney. F. Bierhoff, New York.
73 History of Artificial Limbs. J. MacDonald, Jr., New York.
74 Cholecystitis. R. W. Hardon, Chicago.

Journal Mississippi State Medical Association, Vicksburg.

November.

75 Idiosyncrasies of Patients. L. L. Minor, Hollywood.
76 Therapeutic Evolution. H. Christmas, Tchula.
77 Tetanus Following a Gunshot Wound. C. C. Thompson, Columbia.

Southern California Practitioner, Los Angeles.

October.

78 An Historical Address, on College of Medicine of the University of Southern California. W. Lindley, Los Angeles.
79 Medical Education—Yesterday and To-day. G. MacGowan, Los Angeles.
80 International Society of Surgery. L. Willis, Los Angeles.
81 Famous Controversy Concerning the Use of Cantharides Internally. T. L. Cooley, Philadelphia.
82 Diseases of Women and Children. W. A. Edwards, Los Angeles.

Medical Examiner and Practitioner, New York.

October.

83 Hernia in Relation to Insurance. W. McA. Eccles and G. E. Gask, England.
84 Eye and Ear Work. W. Rider, Rochester, N. Y.
85 Medical Examiner and Life Insurance. A. S. McDaniel, San Antonio, Texas.
86 Syphilis Mortality. T. Solomonsen, Copenhagen.
87 Importance of the Early Recognition of Arterial Changes and of Chronic Vascular Hypertension in Relation to Life Insurance. W. H. Hitchcock, and D. Fulton, Los Angeles.
88 Insurance Feature of Labor Organization. W. B. Watts, Peoria, Ill.

St. Louis Courier of Medicine.

November.

89 Tumors of the Cerebellum. E. A. Babler, St. Louis.
90 Cancer of the Uterus. G. Gellhorn, St. Louis.

Archives of Otology, New York.

October.

91 Case of Double Mastoiditis with Extensive Involvement of the Zygomatic Cells. W. P. Brandegee, New York.
92 Secondary Anesthesia Hemiplegia as a Complication of the Mastoid Operation. W. G. B. Harland, Philadelphia.
93 Operative Treatment of Infective Sigmoid-Sinus Thrombosis. J. D. Richards, New York.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

November 11.

1. Exophthalmic Goiter and Its Treatment. G. R. Murray.
2. *A Conception of Disease. F. Treves.
3. *Treatment of Syphilis by Intramuscular Injection of Mercury. F. J. Lambkin.
4. Tropical Diseases. R. Boyce.
5. Nature of Tick Fever in the Eastern Part of the Congo Free State. J. E. Dutton and J. L. Todd.
6. *Bruhl's Disease (Splenic Anemia) with Special Reference to the Blood Changes Found. P. W. Bassett-Smith.
7. Two Cases of Febrile Tropical Splenomegaly (Kala-Azar) and a Suggestion. P. Manson.
8. Guinea-Worm and Its Hosts. W. M. Graham.
9. Tropical Diseases of the Skin. J. M. H. MacLeod.
10. *Pinta. F. M. Sandwith.
11. Tropical Forms of Pityriasis Versicolor. A. Castellani.
12. *Geographical Distribution and Etiology of Pellagra. L. W. Sambon.
13. Frambœsia Tropica (Yaws). J. C. Graham.
14. Pian (Yaws) in French Indo-China. M. E. Jeanselme.
15. "Dhobie Itch" and Other Tropical Trichophytic Diseases. A. Castellani.
16. *A Tropical Skin Disease. J. Bell.
17. Presence of Spirochetes in Two Cases of Ulcerated Parangi (Yaws). A. Castellani.
18. *Involvement of the Scalp in Leprosy. G. Pernet.
19. Sprue and Hill Diarrhea. J. Cantile, A. Duncan, L. W. Sambon, D. J. Galloway, F. O. Stedman and others.
20. *Diarrhea from Flagellates. A. Castellani.
21. Beri-Beri. J. T. Clarke, R. T. Hewlett, H. Wright, L. W. Sambon, D. J. Galloway and others.
22. Peculiar Schistosomum Egg. S. R. Christophers and J. W. W. Stephens.
23. *Method of Taking Quinin in the Prophylaxis of Malaria. St. G. Gray.
24. Malarial Fever in British Central Africa. H. Hearsey.
25. *Snake Bite, Treated Successfully by Local Applications of Potassium Permanganate. L. Rogers.
26. Blood Counts in Acute Hepatitis and Amebic Abscess of the Liver. L. Rogers.
27. Seven Cases of Liver Abscess Operated on Between July, 1904, and July, 1905. J. Cantile.

2. **Conception of Disease.**—Treves attempts to show that there is nothing preternatural in disease, that its phenomena or symptoms are marked by a purpose, and that that purpose is beneficent; that the processes of disease are aimed not at the destruction of life, but at the saving of it, and that its manifestations are the outcome of a natural effort for cure. He says that disease, as popularly realized, is not one of the ills that flesh is heir to, but one of the good gifts, for its motive is benevolent and protective. He says that he can not express this more concisely than by saying that if it were not for disease, in the popular sense, the human race would soon be extinct. A case is cited illustrating the beneficent effect of the inflammatory reaction which occurs following trauma. To the layman this suggests disease, when in reality the trauma probably would encompass the death of the patient if it were not for this inflammatory reaction. The inflammation which is dreaded so much by the laity is a benevolent process with one purpose, that of protecting the body, and one aim, that of cure. Without the protection of inflammation, says Treves, the human race could hardly survive a month. When inflammation does supervene, therefore, it is the surgeon's part to make it as tolerable to the patient as possible, and as soon as it becomes evident that Nature is intending to throw certain matters from the system, the surgeon, acting on that hint, opens an abscess or incises a tense swelling. He who grumbles about his cold, says Treves, is finding fault with a measure of relief to which he owes his life. What the patient may justly grumble at is the undoubted misfortune that he is the subject of bacterial infection, and he may also, with reason, complain of the discomfort incident to being poisoned; but it is hard to blame Nature for successfully defending him against the effects of this casualty. Methods of treatment whether carried out by Nature or by art, are seldom pleasant, but they are not blameworthy. The symptoms of a malady are in reality the expressions of a desperate attempt on the part of the body to fight the exciting cause of that malady. According to this conception Treves refers to appendicitis, malaria, Malta fever, diphtheria, tuberculosis and bubonic plague. Speaking of cancer, Treves speculates as to whether or not extracts or active principles taken from the glands that are active during the period of development in children, such as the thymus, would exert an influence late in life which they seem to be intended to exert when growth is alert in the young. He wonders whether or not the introduction of the active principle of such a gland in a case of cancer would cause a disappearance of the tumor.

3. **Intramuscular Injection of Mercury in Syphilis.**—In all, 3,230 patients with syphilis were treated by Lambkin by the intramuscular method. They represented syphilis in all its various forms—slight primary abrasion, with indurated inguinal and cervical glands, followed by a roseolar rash; true Hunterian chancre, with glandular enlargements, followed by various rashes, papular, psoriatic, pustular, etc.; phagedenic chancre, rapidly destroying tissue, accompanied or followed by rupial and serpiginous ulceration, causing destruction to both soft and hard parts; the later sequelæ of syphilis being represented by paralysis, both local and general, from cerebral and spinal lesions, and also by many cases of tabes of undoubted syphilitic origin. The treatment necessitated some 60,000 intramuscular injections. Of this number about 10,000 consisted of injections of the soluble salts—calomel and the salicylate of mercury. The remainder—that is, 50,000—was made up of injections of metallic mercury. Most of these patients have been lost sight of, but 30 or 40, with whom Lambkin has been in touch for 10 or 15 years, have since married; none of them has had any return of the disease, nor has the offspring borne traces of hereditary taint. No injections were followed by abscess, nor by embolism or severe stomatitis. On the whole, he says, the success which he has obtained from the intramuscular method of treating syphilis is out of all proportion to that which was obtained in days gone by when using older methods. The remainder of the patients (230) were treated in the last four months. They have all done well.

6. **Splenic Anemia.**—Bassett-Smith, in an attempt to establish a relationship between splenic anemia and affections in which the Leishman-Donovan bodies are found, investigated 2 cases. As a result of these observations he concludes that splenic anemia is not due to any parasite, but belongs to that class of cases which come under the term of "tropical splenomegaly" in which the Leishman-Donovan bodies play an important rôle.

10. **Pinta.**—Under this name Sandwith describes a tropical disease caused by a fungus which produces various discolorations on the uncovered parts of the skin and sometimes on the mucous membranes. It is also known as spotted sickness and *le caraté*. Dirt and poverty seem to be predisposing causes. The exciting cause is the *Trichophyton pictor* which produces what may be called an aspergillosis of the skin.

12. **Pellagra.**—Sambon calls attention to many analogies between pellagra and some of the protozoal diseases, and suggests that study of the prevention of pellagra be made in the direction of its being caused by an animal parasite.

16. **Tropical Skin Disease.**—The disease described by Bell occurs in the form of a large circular patch on the side of the foot, about the size of the palm of the hand, red and irritable in the center, with circular edges undermined, and burrowed in places. It is caused by the *Rhizoglyphus parasiticus*. Treatment with 4 per cent. formalin in glycerin produces immediate results.

18. **Involvement of Scalp in Leprosy.**—Pernet cites 2 cases in nodular leprosy in which the scalp was involved. The diagnosis of the infiltrations of the scalp rested on clinical grounds alone, but Pernet is convinced of its correctness. There was no certain basis on which to make a diagnosis of syphilis.

20. **Diarrhea from Flagellates.**—Castellani reports 2 cases of severe diarrhea caused by several varieties of flagellates, such as the trichomonata, cercomonata, *Entamœba undulans* and the *Lamblia intestinalis*. The affection yielded to the injection of a solution of methylene blue, using three pints at a time.

23. **Quinin Prophylaxis of Malaria.**—The method of taking quinin recommended by Gray is based (a) on the fact that the life cycle of the parasites is nearly always forty-eight hours, and (b) that eight or ten days must elapse after infection before they become sufficiently numerous in the blood to cause an attack of fever. Hence it follows, says Gray, that if

a full dose of quinin (10 or 15 gr.) be taken on two successive days, with an interval of eight or nine days before the next two doses are taken, the parasites will always be destroyed before they can cause fever. The method has proved as efficacious as the five-grain-a-day plan, with the advantages that there is one week when the individual is not taking any quinin at all (which is fully appreciated by those who are susceptible to the unpleasant effects of the drug) and less than half the quantity is used.

25.—See ¶35, this issue.

The Lancet, London.

November 11.

28 Chips from a Surgical Workshop. H. Marsh.
29 •Parathyroid Glands in Exophthalmic Goiter. L. Humphry.
30 Case of Xanthoma Diabeticorum. W. J. Procter.
31 Abscess of the Spleen in Enteric Fever. A. W. Harrington.
32 •Extraordinarily Rapid Diminution of Renal Dropsy Under Citrate of Caffein. H. D. Rolleston and J. Attlee.
33 Acute Gastric and Duodenal Ulcer. R. E. Sedgwick.
34 •Ectopic Gestation which Apparently Ruptured Twice. J. C. H. Leicester.
35 Epidemic of Dysenteric Diarrhea. T. Orr.
36 Ready Method of Differentiating Streptococci and Some Results Already Obtained by Its Application. M. H. Gordon.

29. **Parathyroids in Exophthalmic Goiter.**—Humphry urges that in fatal cases of exophthalmic goiter, of myxedema, of tetany in children, and in cases of death following operations on the thyroid gland, the parathyroids should be examined carefully, for the purpose of ascertaining whether or not there is evidence of any pathologic change. In 2 cases of exophthalmic goiter examined, Humphry found that in the parathyroids there were gross changes consisting of extensive infiltration of fat between the columns of gland cells; in fact, the gland tissue was largely replaced by fat. In two other cases the same process was found, but only in the beginning stages. Humphry also examined the parathyroids microscopically in 18 cases of death from various causes—namely, accident, tubercle, pneumonia, Addison's disease, bulbar paralysis, Bright's disease, diabetes, leukemia, cancer, convulsions and old age. The ages of the patients were from 1 year to 71 years; 12 were female and 6 were male. Twelve were between the ages of 1 and 50 years; the parathyroid glands in these appeared normal, with the exception of one. The gland tissue was compact and practically free from the infiltration of fat; the arrangement of the cells showed instances of the different types of gland tissue. The one exception was from a girl, aged 14 years, who died from burns. The parathyroid in her case showed some excess of fat and she was found to have an enlarged thymus weighing 18 grams. The thyroid appeared to be normal, but was not examined microscopically. Of 6 patients whose ages were from 50 to 72 years, 4 showed well-marked fatty infiltration of the parathyroids; the one most affected was from a case of diabetic coma in a man aged 60. Humphry suggests that the parathyroid gland may have an important function to perform, one that is independent of the thyroid function, and that disturbance of this function may stand in some relationship to the various diseases investigated, especially exophthalmic goiter.

32. **Caffein in Renal Dropsy.**—After all other methods to relieve the edema had failed, Rolleston and Attlee administered citrate of caffein, 7½ grains three times a day, for twenty-five days, when the dose was gradually diminished until it was discontinued entirely about eight days later. The effect of the caffein was manifested almost at once, the urine increasing in amount with a proportionate lessening and final disappearance of the edema.

34. **Twice Ruptured Tubal Pregnancy.**—Leicester cites this case to illustrate the difficulty of diagnosing a ruptured tubal pregnancy when the symptoms are vague and indefinite, pointing toward abdominal disease rather than to the actual condition.

Indian Medical Gazette, Calcutta.

October.

37 Anti-Malarial Measures—Ancient and Modern. H. Hamilton.
38 •Snake-Bite Treated by Incision and Application of Permanganate of Potash. L. Rogers.
39 Report on the Epidemic of Plague in Hughli-Chinsura Municipality, January to May, 1905. D. G. Crawford.
40 Varieties of Bubo Met in Bubonic Plague and the Rational Treatment of Each Kind. E. F. G. Tucker.
41 Treatment of Cataract in Children. H. Smith.
42 Significance of the Pyriform and Globular Bodies Present in the Circulation and Organs in Various Forms of Disease. A. Lingard.

38. **Permanganate of Potash for Snakebite.**—Rogers treated 12 cases of snakebite with potassium permanganate, according to the method proposed by Lauder Brunton. In 4 cases the treatment was commenced at once; in 3 cases a full half-hour elapsed before it was commenced, but in two of these a ligature had been applied shortly after the infliction of the bite. In 3 other cases three-quarters of an hour, one hour and four hours respectively elapsed before treatment was begun, but it still proved successful in saving the life of the patient. Only 2 of the 12 patients died. In the majority of cases the snake inflicting the wound was a cobra. The 2 patients who died did not come for treatment until nine and eleven hours respectively after having been bitten.

Annales des Mal. des. Org. Gen.-Urin., Paris.

Last indexed XLIV, page 139.

43 (XXIII, No. 5.) •Etude clinique sur la pathogénie et la sémiotique de l'albuminurie. E. Lancereaux.
44 (No. 6.) La séparation endo-vésicale des urines. Sa valeur au point de vue du diagnostic de l'état anatomique et fonctionnel du rein. T. Tuffier and A. Mauté.
45 •Palpation Through the Rectum.—Le toucher rectal. Moyen de diagnostic et de traitement dans l'urétrite blennorrhagique algue. P. Lebreton.
46 Des uréthrites algues non-gonococciques. T. Vannod (Berne).
47 Electrolysis in Treatment of Stricture of Urethra.—De l'électrolyse dans le traitement des rétrécissements de l'urètre. Alcayde (Valencia).
48 (No. 7.) Les affections tuberculeuses des reins (of kidneys). L. Bernard.
49 Dispositif nouveau pour redresser les images cystoscopiques (to straighten cystoscope picture). P. Denis (Brussels).
50 (No. 8.) Fistules rénales consécutives à la nephropexie. F. Gardner (New York).
51 Quelques mots sur l'onanisme. C. Féré.
52 La rachistovainisation dans les maladies des voies urinaires. P. Héresco and L. Strominger.
53 Indications réciproques du cathétérisme et de l'intervention chirurgicale dans l'hypertrophie prostatique. L. Charrasse.
54 (No. 9.) Sur le traitement des prostatiques en retention incomplète chronique aseptique avec dilatation de la vessie Nicolich (Trieste). See page 588 of volume XLIV.
55 (No. 10.) •L'anastomose intertesticulaire après la section d'un canal déférent. G. Gatti.
56 Sur 2 cas de calculs du rein (kidney). Oraison.
57 Traitement de l'arthrite algue blennorrhagique du genou par les injections intra-articulaires de sublimé (in knee). L. Galliard.
58 (No. 11.) Diverticule vésical d'origine probablement traumatique sans obstacle à l'émission de l'urine. Serrallach.
59 (No. 12.) Un nouveau électro-cystoscope. W. K. Otis (New York).

43. **Albuminuria.**—Lancereau distinguishes three types of albuminuria, according to the epithelial, vascular or nervous origin. The prognosis varies with each type. It is very serious when the secreting epithelium of the kidney is destroyed, and favorable when the elements are still capable of recuperation. The prognosis is grave also in albuminuria of vascular origin, due to kidney lesions, with a constant and progressive tendency. Albuminuria of nervous origin scarcely modifies the general health; it is not accompanied by attacks of uremia, except under the rarest circumstances, and a complete cure may be obtained. Treatment should vary for these types. In the epithelial form it should be directed to restoring the epithelium to normal and to getting rid of the obstructing débris. After failure of other measures he has sometimes had the urine increase from a half pint to a quart or two quarts or more in 36 hours under the influence of from 6 to 10 drops of tincture of cantharides taken during the day in a mucilaginous julep. Raw milk also favors the diuresis in these conditions. In albuminuria of vascular origin, the aim is to act on the vessels, and the best remedy he has found to date for this purpose is from 1 to 3 gm. of sodium or potassium iodid in 24 hours. Milk is not so important here as in epithelial albuminuria, and need not be ordered except in case of an uremic attack. In albuminuria of nervous origin, the antispasmodic remedies are indicated, with hydrotherapy, an alcohol sponge on rising, and tepid, alternating hot and cold or even cold douches have proved beneficial in his experience. The diet is of importance, because there is generally dyspepsia in young and glycosuria in older subjects. He forbids wine and acids to the younger patients and puts the older ones on a diabetic diet, substituting potatoes for bread. His experience has been very gratifying with treatment along these lines, but in case of an attack of uremia he resorts at once to drastic diuretics and purgatives with the utmost energy, allowing no food but

milk sipped slowly every two hours, with tea and coffee if craved. In the nervous type of albuminuria, the amount of urine approximates normal, the tint is reddish or slightly yellowish. It never has the pale, skim-milk tint of the vascular type. The density ranges from 1015 to 1020, and it is not more abundant during the day than at night. The albumin precipitates in small flakes and may range from 0.5 to 2 or 3 gm. or more in the 24 hours. The albuminuria may be continuous or intermittent, orthostatic or cyclic. The general health is influenced but little. The microscope shows no casts nor epithelial cells in the urine, or, at most, only a few leucocytes and rare crystals of uric acid or calcium oxalate. This form of albuminuria is frequently associated with glycosuria, but the albuminuria does not continue a progressive course. It may cease abruptly or persist indefinitely. Generally curable and mild, this type of albuminuria still exposes, under certain conditions, to uremic accidents, as after getting chilled or exhausted or during the decline of some infectious disease. Energetic, appropriate treatment generally restores conditions to normal, but individuals presenting nervous albuminuria are, as a rule, less resistant to diseases than normal persons and succumb more readily, especially if they are at the same time glycosuric. Consequently their hygiene should always be supervised.

45. **Palpation Through Rectum in Urethritis.**—Lebreton presents numerous arguments to demonstrate that rectal palpation is one of the best, if not the best, means to detect a latent posterior urethritis. It is also an important therapeutic measure in this case, as massage and "expression" of the prostate, through the rectal walls, aid materially in the cure of lesions in this region. If the pressure of the finger on the prostate does not elicit pain, then massage should not be done, as the gland is yet sound. Massage is also contraindicated when the pressure is painful only along the median line, showing that the prostatic urethra is the only part involved. Massage under these conditions would only serve to spread inflammation to hitherto sound parts. On the other hand, massage is indicated whenever the lateral lobes are sensitive to pressure, regardless of the degree of painfulness. Massage should always be preceded by filling the bladder so that the liquid flowing out afterward will sweep out the débris resulting from the manipulations. In case of an actual abscess, massage is contraindicated until after the abscess has been evacuated, as it might induce perforation into the rectum or urethra. Evacuation through a transverse perineal incision is preferable, followed by massage.

55. **Intertesticular Anastomosis.**—Gatti says that degenerative processes follow when one testicle is grafted on the other, unless the manipulations have been extremely gentle. He has found it possible to make an anastomosis between the testicles after severing one vas deferens, thus insuring an outlet for its secretions. When this was done with the minimum of traumatism, the parts healed without degenerative processes and normal function was retained. There is only a very slight proliferation of connective tissue when the operation is done without resection of gland tissue. Anastomosis between the testicles should be advised in case of operative or traumatic lesions of the vas deferens of a sound testicle, but not after epididymectomy for tuberculous epididymitis. Gatti has had excellent results from this intertesticular anastomosis on dogs, and thinks that the conditions will prove much more favorable in man. He incises the tunica vaginalis and the tunica albuginea in the form of an X and then turns back the four triangular flaps made by this incision. The denuded surface of the two glands thus exposed by the turning back of the flaps is lightly freshened with a sharp knife, and they are held in contact with a stitch at each corner. The article is illustrated. (Mauclaire's experience in engrafting an atrophic testicle on its sound mate was mentioned in THE JOURNAL, 1903, page 62 of volume xl.)

Bulletin de l'Acad. de Médecine, Paris.

60 (Year LXIX, Nos. 33-34.) *Flies and Cholera.—Mouches et choléra. A. Chantemesse and F. Borel.

60. **Flies and Cholera.**—Chantemesse comments on the fact that more than a million and a half of victims have succumbed to cholera in the last four years. The disease spreads by transportation to long distances, by propagation from city to city and by dissemination from house to house, from individual to individual. Transportation of the contagion to long distances in merchandise is of such rare occurrence, he says, if it occurs at all, that prophylactic measures in this line would be worse than the danger to be feared. If the contagion could be transported in the goods and baggage of persons coming from infected countries, then the progress of cholera would have been entirely different. It would have followed the routes of navigation, and prophylactic disinfection, by the usual technic to date, would not have prevented this. The drinking water taken on board in an infected port would certainly infect the persons on the vessel during a long voyage if danger from this source were to be apprehended, but this is not the case. During the last four years the 4,000 ships returning from the Orient through the Suez Canal have brought 200,000 men in their crews and 500,000 passengers, and yet only 13 of the vessels have had cholera on board and only 29 persons were affected. Some of the persons were in the stage of incubation when they embarked, but in others the disease appeared from fifteen to thirty days after embarkation. These individual breakings out of the disease are extremely dangerous, and they are the only features to be feared in regard to the transportation of cholera to a distance. In one instance a ship from Java had a case thus break out twenty-nine days after leaving. If it had started from Bombay, the passengers would have been landed in France by the twentieth day, and the disease might thus have developed after the individual had been nine days on French soil. The maritime sanitary police are helpless in face of occurrences of this nature. The pathogenic microbes may lurk in the human organism without manifesting their presence. Gotschlich was sent, this summer, to Tor to examine the pilgrims returning from Mecca. Cholera did not make its appearance in Mecca this year, but he was ordered to examine the intestines of every pilgrim succumbing at Tor to any disease. He found cholera germs in several of the Russian and Turkish pilgrims from regions where cholera had been prevalent when they started on their pilgrimage. The identity of the cholera germs was confirmed by Gaffky, Köhler, Kolle and Meinicke, to whom they were sent for corroborative testimony. During the Mecca pilgrimage of 1905, no cases were observed which resembled cholera either clinically or in its pathologic anatomy, and yet several persons carried in their intestines for more than five months live cholera germs, capable of reproduction, and neither the bearers nor their neighbors developed cholera. The vibrios must have been very scanty or very much attenuated or a favorable opportunity for passing them to susceptible individuals must have been lacking. Recent data suggest that the limit of latent microbism of this kind is six or seven weeks at most. For this latent microbism to be still active after thirty days it seems to be necessary for the bearers of the bacilli to find some environment where filth or other conditions cause the revival of the attenuated microbes. Marseilles is only seventeen days from Bombay, and yet the town has never been infected by cholera arriving directly from India. Propagation of cholera from town to town is limited by the fact that three or four days of desiccation kill off the germs in baggage, clothing, etc. For this reason infected clothing arriving at Paris from India is not dangerous, while it would be extremely dangerous if it came from a town only a day's journey away. Flies can readily transmit the germs; their mouths, feet and intestines were found to harbor the vibrios in some tests which Chantemesse reports. Cholera is most fatal in the countries without sewerage, and it is there that flies most abound. The fly can not transport cholera to a distance nor propagate it from town to town, bnt it is a most powerful means of dissemination, and the dying down of epidemics in winter is due to the lesser number of flies. He concludes with the remark that in time of a cholera epidemic it might be well to placard the walls with the saying of an American writer: "It should be more of a disgrace for a housekeeper to have flies in her house than bedbugs in her beds."

Revue de Gynécologie, Paris.

Last indexed page 1367.

61 (IX, No. 5.) *Hystérectomie abdominale avec évidement pelvien et recherche des ganglions pour cancer de l'uterus. A. Pollosson (Lyons).

62 *Le sarcome de l'utérus. Symptomes. Diagnostic. Traitement. G. Piquand.

63 *Traitement de l'infection puerpérale grave par la laparotomie ou la colpotomie, sans hystérectomie. L. Sourdille.
64 De l'occlusion au niveau de l'angle colique gauche (left angle of colon). A. Nores (Cordova, Argentina).

61. **Abdominal Hysterectomy for Cancer.**—Pollosson relates the particulars of 32 cases of uterine cancer in which he operated by the abdominal route. He had previously preferred the vaginal route, but the ultimate results were unsatisfactory and he adopted Wertheim's technic. He removed the uterus and the tissues surrounding it in a single large mass. The ureters have to be detached from the mass first, and, when possible, transverse clamps should be applied to the vagina before cutting it. This prevents infection of the peritoneum. He gives the minute technical details of his operations and reviews the results. Several of his patients succumbed to intercurrent affections and a few did not survive the operation. Examination of the glands and tissues in these cases showed that all the diseased tissue had been unmistakably removed. In 23 cases in which he explored with his fingers, through the peritoneum, the glands of the region, he found them suspicious in 8 and removed them. In 4 of these the glands proved to be cancerous. In conclusion, the details of each of the 32 cases are given, and also a life-size photograph of the mass as removed from two patients.

62. **Sarcoma of the Uterus.**—Piquand discusses the symptomatology and diagnosis of sarcomata of the parenchyma, of the mucosa of the fundus and of the cervix. He has found 171 cases of the first group on record in which an operation was attempted. The operative mortality was 9.3 per cent. and recurrence is known in 29 cases. The ultimate outcome is not known in most of the others. In 36 patients with sarcoma of the mucosa seen a few months or years later, there had been recurrence in only 12 and 24 were in good health from one to eleven years after the operation. In 53 cases of sarcoma of the parenchyma, 28 of the patients were in good health from nine months to nine years after the operation. There are thus 52 permanent cures on record. In 19 cases of diffuse sarcoma of the mucosa, the uterus was removed in 16 and 3 of the patients are without recurrence from 17 to 26 months later, while 8 have not been followed and 4 soon succumbed. In 48 cases of sarcoma of the cervix, 3 patients died during the operation and recurrence was observed in 33. Only 12 are reported as cured, and the majority of these have not been traced since. The incomplete operations were always followed by recurrence.

63. **Laparotomy as Treatment of Puerperal Infection.**—Sourtille has treated 4 patients with severe diffuse puerperal peritonitis by mere laparotomy or posterior colpotomy, and succeeded in saving 3 of them. Removal of the uterus is a serious operation, and its record to date in puerperal infection is the reverse of encouraging. The outcome proves it to be either a useless mutilation or else that the prognosis was inevitably bad. A mere laparotomy or colpotomy enables the exact condition of the parts to be ascertained and has direct healing value in itself. As it entails no shock, he urges that it should be done early in case of severe infection, without waiting for the woman to be touched by the wing of death, after failure of curetting or drainage of the uterus. Done systematically, in time, it would enable the condition of the uterus and adnexa to be inspected, and, if a threatening lesion were found, to have it removed while the patient's resisting powers were still able to cope with a major operation. He reports a number of cases in which laparotomy or colpotomy unmistakably saved the patients in diffuse puerperal peritonitis or postabortion infection, and urges the general adoption of laparotomy with drainage as the routine procedure in threatening puerperal infection. Several surgeons have published reports of successful cases of this kind, but no one before, he remarks, has advocated this as the systematic technic for treating serious postpartum or postabortion infection. The entrance of air attenuates the virulence of the toxins and germs, especially the anaërobic, which, as a rule, are largely involved in puerperal infection. Dialysis is promoted and the drainage carries away the dialyzed morbid products.

Berliner klinische Wochenschrift.

65 (XLII, No. 38.) *Habitus phthisicus und tuberkulöse Dyspepsie. B. Stiller.
66 *Zum Verständnis der Wirkung der Röntgen-strahlen bei der Leukämie. J. Arneth.
67 Zur Frage der sogenannten atypischen myeloiden Leukämie. K. Helly.
68 *Erfahrungen auf dem Gebiete der Therapie mit Röntgenstrahlen. M. Cohn.
69 *Ueber prophylaktische Maassnahmen gegen die Diphtherie. P. Aaser.
70 *Spectrum Test for Blood.—Ueber den Wert des Hämochromogenspektrums. A. de Dominicis.
71 Zur Wirkung des Chlorbaryums und Barutins. H. Brat.
72 Immunisierungsversuch gegen Strychnin. H. Meier.
73 Zur physikalischen Therapie der Neurasthenie. A. Laqueur.

65. **Habitus Phthisicus and Tuberculous Dyspepsia.**—Stiller has found that the floating tenth rib, which he long ago proclaimed to be a sign of the asthenic habitus, is also a sign of a consumptive tendency. This kind of body supplies a predisposition to tuberculosis as well as to nervous dyspepsia. The individual whose build stamps him as a candidate for tuberculosis is also a candidate for nervous dyspepsia. This explains why tuberculosis is complicated with dyspepsia in from 70 to 90 per cent. of all cases. He has found that the degree of movability and the extent of the defect in the tenth rib is an index of the extent of the dyspepsia and nervousness. In extreme degrees, the ninth rib may be movable also and the eleventh and twelfth ribs may move much more freely than common. He has observed a number of cases in which apparently healthy individuals sank into a condition of severe dyspepsia, neurasthenia and emaciation in consequence of some trivial stomach or intestinal trouble—in one instance a tapeworm. They lost rapidly from forty to sixty pounds or more, and years were required to regain their former weight. Signs of gastroptosis or nephroptosis developed in most of them. Some constitutional disease or latent cancer seemed probable, but the rib stigma showed that the individual was hereditarily burdened with a tendency to dyspepsia and nutritional disturbances. Circumstances had been so favorable hitherto that he had kept at the highest limit until some accident upset him. In such cases there must be not only a lack of stability in the digestive, but also in the assimilating organs, probably due to participation of the intestinal sympathetic system in the asthenia of the central nervous system. This serious tendency is revealed solely and alone, he claims, by the rib stigma in an otherwise robust physical development.

66. **Roentgen Treatment and Leukemia.**—Arneth's experience and study of leukemia under Roentgen treatment have convinced him that this treatment reduces the consumption of the neutrophiles, eosinophiles and mast cells of the circulating blood. The extent of the reduction depends on the duration and intensity of the exposures, which may lead finally to far-reaching, although never quite complete, restoration to normal of the blood. The morphologic behavior of the blood cells shows that there can be no question of destruction of the circulating leucocytes or injury of the blood-forming organs under the influence of the rays. Roentgen exposures have an entirely different action on the sound and on the leukemic human organisms, as he explains in detail. He defines leukemia as the expression of an immense destruction of leucocytes and consequent constant demand for production of more, with some special stimulus for the hyperplastic development of the blood-forming organs. This stimulus may be some special property of the still hypothetical virus affecting these organs.

68. **Roentgen Treatment.**—Cohn summarizes his conclusions in the statement that in lymphatic and myelogenic leukemia the exposures may induce subjective well-being, and all the appreciable objective signs of the disease may also subside, but experience has shown that the symptoms return, on complete suspension of the treatment, after a longer or shorter interval. It is necessary, therefore, after an apparent cure has been realized from prolonged Roentgen treatment, to continue intermittent treatment, with one or two sittings each week. Still better prospects are offered in Roentgen treatment of pseudoleukemia and of sarcoma originating in the lymphatic apparatus. Cancroids, when not too extensive, are positively cured in a comparatively brief time. In superficial cancers of the face, Roentgen treatment deserves the preference over surgical on account of the absence of scarring. Prophylactic exposures after a cure has been obtained should be unconditionally advised. More radical treatment than Roentgen exposures are required for carcinomata infiltrating into the deeper tissues or covered with sound skin. He explains the lack of influence of the rays on the enlarged spleen in many cases as due to the

chronic hardening of the capsule. In exposing the spleen he uses excessively hard tubes, at a distance of from 10 to 20 cm., the sittings from ten to fifteen minutes long, once a day. To prevent dermatitis he orders the abdomen to be washed with a soft sponge and tepid water three times a day, and after each washing alcohol is rubbed into the skin to toughen it. At night, lanolin or other salve is rubbed into the abdomen. With these precautions he has never had any trouble from dermatitis, even when the total duration of the exposures was twelve hours without a pause. There is almost always slight transient redness of the skin after from eight to fourteen days, accompanied by itching, especially at night.

69. **Prophylaxis of Diphtheria.**—Aaser is convinced that preventive injections of serum are reliable for prophylaxis. He relates a number of instances in which incipient epidemics were aborted by preventive injections of antitoxin, even although exposed individuals were found to harbor diphtheria bacilli in their throats. As the immunity conferred does not last more than two or three weeks, he repeats the preventive injection after from two to four weeks if there is still opportunity for contagion.

70. **Hemochromogen Test for Blood.**—De Dominicis reaffirms the extreme simplicity and reliability of his test for detection of blood by means of the spectrum of hemochromogen. The loose scrap of dried blood is placed in a droplet of pyridin on an object glass and ground fine with a glass rod. A drop of ammonium sulphate is then added, and a cover glass placed over it. A chromatic reaction can then be observed, while hemochromogen crystals form, and the spectrum for hemochromogen becomes apparent. If the scrap of blood is on a dark background it must be made mechanically permeable to the light. A few mm. of a single thread of a blood-stained garment are sufficient to give the hemochromogen spectrum immediately and distinctly. This test gives positive results when others fail, and the spectrum is more sensitive than that of oxyhemoglobin. He commends this as by far the best general routine test for detection of blood with very little material.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed page 1767.

74 (LXXXV, Nos. 1-2, Fiedler *Festschrift*.) Ueber die vierte (Filatow-Dukes) Krankheit. O. Unruh.
75 *Behavior of Circulatory Apparatus in Acute Infectious Diseases.—Zur Kenntnis des Zirkulationsapparates, etc. Schmaltz.
76 *Ueber Myokarditis und Gefässerkrankungen im Kindesalter, insbes. nach akuten Infektions-Krankheiten (in children). F. Förster.
77 *Untersuchungen über rheumatische Myokarditis. P. Geipel.
78 Zur Pathologie und Aetiologie des Malum Dupuytren. G. Buch.
79 Otitic Brain Abscess in Left Temporal Lobe with a Peculiar Form of Speech Disturbance.—Otitischer Hirnabscess im linken Schläfenlappen, etc. M. Mann.
80 *Intraperitoneale Infusion und Ernährung (infusion and feeding). A. Schmidt and H. Meyer (Dresden).
81 Physikalisch-chemische Untersuchungen an Ergüssen in Körperhöhlen (effusions). H. Meyer. Id. W. His.
82 Ueber Rachitis tarda. G. Schmorl.
83 *Zur Frage der chirurgische Eingriffe bei lienaler Leukämie. H. Lindner.
84 *Puerperal Affections of the Lungs from Thrombosis and Embolism.—Ueber Lungenerkrankungen im Wochenbette, beruhend auf Thrombose und Embolie. Leopold.
85 Zur Behandlung des Puerperal-Fiebers mit intravenösen Collargol-Einspritzungen. Osterloh.
86 Ueber metastatische Hautentzündung bei Pyämie und über Hautentzündungen bei Infektions-Krankheiten im Allgemeinen (metastatic inflammation of skin). J. Werther.

75. **Behavior of Circulatory Apparatus in Acute Infectious Diseases.**—Schmaltz declares that the greater his experience and the more he is able to follow the consequences of infectious diseases into later life, the more he is convinced that every kind of infection is liable to injure the organs of the circulation, the injury ranging from the slightest, most transient effects to severe, fatal lesions. The injurious influence of the underfeeding and the long lack of exercise must also be taken into account. He reviews the findings and course of the cardiovascular affection in various acute infectious diseases. In 4 cases of diphtheria and 5 of scarlet fever, and in the majority of 52 other diphtheria and 19 scarlet-fever patients, the cardiovascular apparatus still showed disturbances when the patients were dismissed, and examination later confirmed the morbid findings. The trouble was generally mitral insufficiency, sometimes combined with subjective disturbances. He does not know of any research on the later course of the heart disturbances in cases of typhoid, measles and pneumonia. They frequently persist until the patients are dismissed, at least.

76. **Vascular Affections and Myocarditis in Children.**—In this first part of his monograph Förster discusses acute primary myocarditis, myocarditis after burns and in cutaneous affections and diphtheria. Fiedler described in 1897 an acute interstitial myocarditis as a primary and isolated affection of the myocardium. He had observed 5 cases of it and 4 have since been reported by others, all but one terminating in death. The patients were adults. Förster here describes the first case known in a child. Myocarditis after severe burns has been observed. It is liable to develop tardily in children. In 2 cases in his experience the children died on the twenty-eighth day after they apparently were well on the road to recovery. He has also witnessed a case of fatal myocarditis complicating eczema of the face and scalp. In diphtheria he notes that the frequency of myocarditic complications increases with the age of the patients, his figures ranging from 14.3 per cent. of the children under 2, to 88.8 per cent. of the children between 11 and 15. The insidiousness of the heart disturbances in diphtheria imposes the greatest caution on the physician, at least until after the fourth week, when he detects even the slightest intimation of a heart or vascular disturbance in the course of diphtheria. Repeated examination of the pulse, especially during the first two weeks, is indispensable in connection with examination of the heart. In his experience the first symptom was in the pulse in 10 and dilatation of the heart in 2—all in the first week. In the second week the pulse was the first symptom in 6, and dilatation in 6, with heart sounds in 5. He noted dilatation of the heart in 29 out of his 40 cases of diphtheritic myocarditis. In none of these patients to date is the heart absolutely normal again. When the myocarditis sets in early it generally proves more severe.

77. **Rheumatic Myocarditis.**—Geipel describes the findings in a number of hearts from cases of articular rheumatism. The findings are peculiar and pronounced, but they are not specific for rheumatism, as he has found the same in cases of contracted kidney, etc.

80. **Intraperitoneal Infusion and Feeding.**—Schmidt and Meyer report extensive research on animals to determine the tolerance of the peritoneum for injected solutions. Weak solutions of sugar and dextrin were promptly absorbed and did not cause material irritation. Oil was tolerated still better, and application of these findings in the clinic confirmed the fact that a small amount of oil injected into the peritoneum is tolerated without reaction and is absorbed. In 2 patients with advanced cancer the oil seemed to be absorbed and oxidized while the general condition improved. Intra-abdominal infusion of oil is far preferable to subcutaneous administration. It does not cause pain, and much larger quantities can be injected. The oil is rapidly absorbed and does not irritate the peritoneum in the least. When injected with a drug it seems to diminish the irritation from the latter. Infusion of solutions of albumin or sugar has not proved so practicable in several respects, at least in the concentration of 5 per cent. used in the tests reported. In regard to preliminary injections to enhance the resisting power of the peritoneum before an operation they describe their experiences with 5 to 10 c.c. of a 0.9 per cent. salt solution in from 250 to 500 c.c. of horse serum. In other cases the horse serum was used alone or the saline alone. The combination of the two, however, induced the highest leucocytosis. The infusion was made from seventeen to nineteen hours before the operation. The injection was almost entirely painless, and is a perfectly harmless procedure. It attains the desired aim, namely, the inducing of a slight irritation of the peritoneum with general leucocytosis. After experiments on animals several experiences were made with oxygen introduced into the peritoneum of patients with double pneumonia or tuberculous peritonitis or cirrhosis of the liver. The procedure proved feasible and harmless. The only danger might be that if the abdomen were very much inflated with the gas, some might find its way into the right ventricle. In the cases of tuberculous peritonitis the absorption of the

ascites seemed to have been promoted by the introduction of the oxygen. In one case in particular repeated tapping had been unable to arrest the formation of ascites, but after the introduction of the oxygen it did not reaccumulate and the patient was dismissed in comparative health. In this case, after withdrawal of 1,750 c.c. of fluid, 1,700 c.c. of oxygen had been introduced. In the course of the next week or so the abdomen increased somewhat in size, but not enough to require tapping, and before the month was out there was no further trace of free fluid in the abdominal cavity. The patient was a woman of 30. Further experiments with injection of sodium bicarbonate in diabetes and of cocain in severe gastric crises gave negative results, and signs of irritation deterred them from further experiments in this line. In any event, only weak and isotonic solutions should be injected. It is possible, they think, that fine results might be obtained by direct application of the drug when it is desired to exert a direct local influence on the peritoneum or intestines. In conclusion Schmidt and Meyer suggest the possibility of thus arresting hemorrhage with adrenalin, or of influencing tuberculous ascites by an emulsion of iodoform and glycerin, and also the practicability of reducing irritation by infusing oil or of influencing peristalsis by appropriate medication introduced into the abdominal cavity.

83. **Surgical Treatment of Splenic Leukemia.**—Lindner refers to a case in which the general health improved remarkably after removal of the spleen, although the entire syndrome of splenic leukemia was not banished by the operation. Four cases are on record in which the patients were restored to health by splenectomy, including Carsten's case. On the other hand, reports have been published of 28 cases in which no benefit was derived from the operation.

84. **Puerperal Embolic Lung Affections.**—Leopold relates a case in which a woman convalescing from childbirth had three severe embolic attacks with consecutive infarct in the lungs. The case is another example of the premonitory value of the climbing pulse (*Kletterpuls*), and it further shows to what grave danger the apparently healthiest parturient woman is constantly exposed for days. It also emphasizes the necessity for scrupulous avoidance of every unnecessary demand on the lung, heart and abdominal muscles. The probable source of the embolism was a varicose vein on the leg. The patient finally recovered.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

87 (XXXI, No. 40, October 5.) •Aetiologie und Behandlung der Appendicitis. Lucas-Championnière.
88 •Prognose und Behandlung der Uterus-Myoma. E. Knauer. (Concluded).
89 Zur osteoplastischen Resektion der äusseren Augenhöhlen wand (outer wall of orbit). W. Czermak. (Concluded.)
90 •Diätetik des vorgeschrittenen Kindesalters (of children from 2 to 15). Monti.
91 Zur bakteriologischen Choleradiagnose. E. Friedberger and A. Luerssen. Id. A. Böhme.
92 Zur Kenntnis des Virus des Molluscum contagiosum des Menschen. M. Juliusberg.
93 Therapeutische Fortschritte auf dem Gebiete der Gynäkologie (progress). J. Klein.
94 Artificial Ems Salts for Eye Lotion.—Augenbäder mit Lösungen von künstlichen Emser Salz. Hesse.
95 Official Report on Relations Between Human and Bovine Tuberculosis. (See news columns, page 1339.)
96 Patents of Interest to Physicians.—Erfindungen aus dem Gebiete der Medizin, der öffentlichen Gesundheitspflege und der Krankenpflege. G. Justi.

87. **Appendicitis.**—Lucas-Championnière ascribes great importance to preceding influenza and to an undue proportion of meat in the diet as factors in the etiology of appendicitis. He operates as soon as the diagnosis is certain, unless from eight to ten days have already elapsed.

88. **Uterine Myoma.**—Knauer does not approve of electricity or caustics in treatment of myomata of the uterus. He advises expectant treatment when women are near the menopause unless forced by hemorrhage, pain or other symptoms of disturbance to adopt other methods. He operates through the vagina and warns against going too far in the effort to retain the uterus and thus compromising the later results.

90. **Dietetics for Children.**—Monti expatiates on the necessity for adapting the diet to the stage of development of the digestive organs and to the needs of the growing organism, giving detailed directions for children from 2 to 15 years old.

Books Received

SCIENTIFIC MEMOIRS BY OFFICERS OF THE MEDICAL AND SANITARY DEPARTMENTS of the Government of India. Issued under the Authority of the Government of India by the Sanitary Commissioner of the Government of India, Simla. Calcutta: Office of the Superintendent of Government Printing, India, 1905.

No. 13. Oriental or Delhi Sore. By Captain S. P. James, M.B., I.M.S. Price, 10 annas, or 1s.

No. 14. A Parasite Found in the White Corpuscles of the Blood of Dogs. By Captain S. P. James, M.B., I. M. S. Price, annas 10 or 1s.

No. 15. A Parasite Found in Persons Suffering from Enlargement of the Spleen in India (Third Report). By Lieut. S. R. Christophers, M.B., I.M.S. Price, annas 10, or 1s.

No. 16. The Specificity of Antivenomous Sera, with Special Reference to a Serum Prepared with the Venom of Daboia Russelli. By Captain G. Lamb, M.D., I.M.S. Price, annas 6, or 7d.

A MEMOIR OF DR. JAMES JACKSON, with Sketches of his Father, Hon. Jonathan Jackson, and his brothers Robert, Henry, Charles and Patrick Tracy Jackson; and Some Account of their Ancestry. By J. J. Putnam, M.D. Cloth. Pp. 456. Price, $2.50 net. New York: Houghton Mifflin & Co., 1905.

SURGICAL DIAGNOSIS: A Manual for Students and Practitioners. By A. A. Berg, M.D. Illustrated with 215 engravings and 21 plates. Cloth. Pp. 543. Price, $3.25 net. Philadelphia: Lea Brothers & Co. 1905.

RADIOTHERAPY IN SKIN DISEASE. By J. Belot, with a Preface by L. Brocq. Translated by W. D. Butcher, M.R.C.S. Authorized translation from the Second French Edition, with thirteen plates and twenty-eight Illustrations. Cloth. Pp. 463. New York: Rebman Company, 1905.

PHYSICAL DIAGNOSIS, Including Diseases of the Thoracic and Abdominal Organs. A Manual for Students and Physicians. By E. Le Fevre, M.D. Second Edition. Revised and Enlarged. Cloth. Pp. 479. Price, $2.25 net. Philadelphia: Lea Brothers & Co., 1905.

MUTTERPFLICHT UND KINDESRECHT. By Dr. Med. Eugen Neter. Mit einem Vorwort von Kinderarzt, Dr. H. Neumann, Berlin. Paper. Pp. 91. Munchen: Verlag der Aerztlichen Rundschau (Otto Gmelin).

UNIVERSITY OF MISSOURI STUDIES. Topography of the Thorax and Abdomen. By P. Potter. Science Series, Vol. 1, No. 1. Paper. Pp. 142. Price $1.75 net. Published by the University of Missouri, 1905.

ARMY LIST AND DIRECTORY. Officers of the Army of the United States. November 20, 1905. The Military Secretary's Office. Paper. Pp. 91. Washington: Government Printing Office, 1905.

NEW YORK STATE LIBRARY. Yearbook of Legislation, 1904. Edited by R. H. Whitten, Sociology Librarian. Cloth. Price, $1.00. Albany; New York State Education Department, 1905.

AROUND THE WORLD VIA INDIA. A Medical Tour. By N. Senn, Ph.D., LL.D. Cloth. Pp. 347. Chicago: American Medical Association Press, 1905.

DIAGNOSE UND THERAPIE DES EKZEMS. Dr. S. Jessner, Konigsberg I. Pr. Paper. Pp. 96. Würzburg: A. Stubers Verlag (C. Kabitzsch), 1905. Pries, mk. 1.50.

NEW PATENTS.

Recent Patents of Interest to Physicians:

802728. Apparatus for lifting and transporting invalids. Wm. Amos, Providence, R. I.
802596. Formaldehyde-generator. Wm. E. Ramsay, Perth Amboy, N. J.
802601. Sterilizer for surgical dressings, instruments, etc. Samuel G. Scanlan, Madison, Wis.
802527. Device for preventing sea-sickness. Wilhelm Schmidt, Wilhelmshohe near Cassell, Germany.
802835. Double salt of ferric chlorid and cotarnin hydrochlorate and making same. Arnold Voswinkel, Berlin, Germany.
802969. Cooling-case for soda-fountains. Wm. W. Butler, Decatur, Ill.
802980. Making oxalic acid, etc. Frederick A. Feldkamp, Newark, N. J.
803476. Truss. Wm. Fielding, Lewiston, Me.
803282. Microcoustic or device to assist the hearing. John R. Gault, Montooth, Pa.
802286. Clavicle dressing. James W. Hingston, Chicago.
803170. Atomizer or nebulizer. Olin C. Knight, Kalamazoo, Mich.
803498. Cranial saw. Harvey C. Masland, Philadelphia.
803352. Thermometer for water-bags. Rachel Meyer, New York.
803193. Appliance for surgical beds. Emily H. Richards, Oak Park, Ill.
803145. Machine for removing and putting on the tops of capsules. Benjamin T. Winchester, Windsor Hills, Md.
804086. Womb supporter. Martin J. Barchfeld and F. C. Hunt, Girard, Ohio.
803892. Auriphone. Robert W. Goers, Syracuse, N. Y.
803619 Invalid-bed. Bella McMahan, Six Points, Pa.
803922. Artificial limb. Harry J. Morris, Wichita, Kans.
803708. Massaging Implement. Alvah U. Patchen, Syracuse, N. Y.
803639. Thermometer. Charles J. Tagliabue, Brooklyn.
803640. Syringe. Charles J. Tagliabue, Brooklyn.
803956. Surgical apparatus for internal examination. J. C. Zubli, Amersfoort, Netherlands.
804207. Artificial leg. John Bunderle, Jackson, Minn.
804584. Syringe. Charles J. Davol, Providence, R. I.
804784. Surgical Table. Edward L. and E. B. von Eschen, Kirksville, Mo.
804229. Forceps and the like. Thomas C. Hutchinson, Decorah, Iowa.
804407. Syringe. Alcinous B. Jamison, New York.
804484. Therapeutic apparatus. Carl O. Lindstrom, Chicago.
804272. Respirator. Wilhelm Schwarz, Pforzheim, Germany.
804776. Thermomedical device. Dexter M. Small, Providence, R. I.
804680. Scalp-massage brush. Rowland M. Smith, Chicago.
804682. Making protocatechuic aldehyde. Rudolf J. M. Sommer, Vienna, Austria, Hungary.
804687. Pasteurizing apparatus. Frank Tyson, Canton, Ohio.